Cancer Prevention: knowledge, attitude and behaviours of people in mid-life - Research Report

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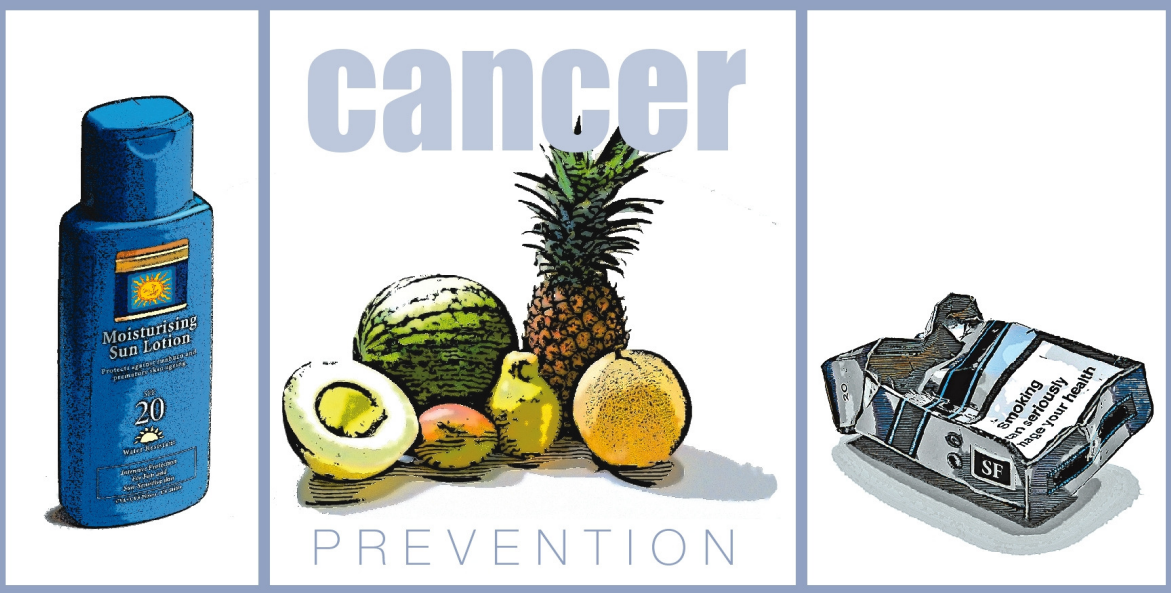

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EXECUTIVE SUMMARY

Introduction

Cancer is used as a generic term to describe over 100 diseases that can affect any part of the body. In 2003, cancer was the cause of 26% of all deaths in the United Kingdom (UK). In Northern Ireland, cancer was responsible for 3,757 deaths in that year, 25% of all deaths. These statistics are part of an ongoing trend showing slight increases in cancer deaths overall with approximately 9,000 people diagnosed with cancer in Northern Ireland each year (Cancer Research UK, 2006). Cancer prevention is understood to describe educational, policy and infrastructural initiatives and interventions. There is little doubt that prevention is the most important and reliable cancer fighting strategy that exists today (National Cancer Institute, 2006).

Aims and Objectives

The aim of this study was to explore the stated knowledge, attitudes and behaviours of people in mid-life (between 35 and 54 years of age) in Northern Ireland with regard to cancer prevention measures.

The objectives of the study were:

- To explore the knowledge of people in the mid-life stage to cancer and its prevention;
- To explore the provision and acquisition of cancer prevention information within this age group;
- To explore generic attitudes of people in this age group to cancer and its prevention;
- To explore the behavioural intentions of people in the mid life stage to prevent cancer in relation to attitude, subjective norms and behavioural control;
- To identify actions that will enhance cancer prevention measures with this population.

Rationale for the Study

It is clear from previous research that the knowledge, attitudes, and behaviour of the general public with regard to cancer prevention need to be addressed through education and intervention. No study to date has assessed these parameters for people aged 35 to 54 in Northern Ireland. The absence of this evidence means that it is difficult to target cancer prevention messages with any identifiable effect. This is important due to the fact that as much as 80% of all cancers are potentially preventable (National Cancer Institute, 2006). Lung and bowel cancer have been chosen for exploration as they are among the top three most common cancers for both men and women in Northern Ireland. Skin cancer has also been chosen because of the rapid increases in non-melanoma skin cancer diagnoses.

Research Design

The study used a mixed methods research design incorporating the following stages:

1. Exploratory focus groups
2. Representative survey
3. Volunteer sample survey

Methodology

Six focus groups were undertaken in total with between 6 and 10 participants in each group. With regard to the constitution of the groups, four mixed gender groups, one male only and one female only were undertaken to gather exploratory data on the differences in knowledge, attitudes and beliefs of men and women. Data was analysed using Miles and Huberman's (1994) structured approach. The findings of the focus groups were used to inform the next stage of the study in designing the survey.

The second stage of the study was a postal survey to members of the public to explore their attitudes, knowledge and behaviours towards cancer prevention. The sample was drawn from the Northern Ireland Edited Electoral Register and stratified by gender and geographical location. The target sample size was set at 1,065 for a representative sample using a confidence level of 95% and a confidence interval of 3. Five thousand questionnaires were distributed across Northern Ireland. Data from returned questionnaires was analysed using a range of parametric and non-parametric tests. Analysis included descriptive statistics as well as regression procedures.

The third stage of the study was a volunteer sample survey. People were asked in stage two to return their contact details independently of the stage two questionnaires if they were willing to be involved in a follow up stage within the study. In total, 267 respondents volunteered to take part in the final stage. All volunteers were sent a short questionnaire which explored perceptions of help and support in further depth and views on provision of help and support from key informational sources. A leaflet on either skin or colorectal cancer or on stopping smoking was included with the questionnaire and respondents were asked a series of evaluative questionnaires about the leaflet. Quantitative data from the survey was analysed using descriptive and non-parametric statistics in SPSS and the qualitative data was analysed using Burnard's (1996) method of content analysis.

Ethics

Ethical approval was granted by the University of Ulster Research Ethics Committee.

Focus Group Findings

Focus group findings uncovered the following:

- There was a low level of knowledge of cancer prevention among the participants;
- Most participants were able to identify at least one cancer prevention behaviour such as not smoking or eating five portions of fruit and vegetables a day;
- Some cancer prevention behaviours identified were questionable such as eating bioactive yogurt regularly.
- There were differences in levels of awareness between male and female participants in the groups;
- Participants were unsure of health promotion initiatives on how to prevent cancer;
- There were varied attitudes towards the effectiveness of health promotion initiatives on cancer prevention;
- Sources of cancer prevention information were identified including television advertisements and programmes, radio, newspapers, magazines and word of mouth;
- There was a strong perceptions, especially among the male participants, that sometimes the amount of information provided was overwhelming and that this led to people ignoring it;
- Male participants felt that information should be clear and concise and that the warning signs of cancer should be communicated widely;
- Participants felt a lack of trust and confidence in some of the information being provided;
- There was an emerging attitude from some participants of "*it won't happen to me… I don't want to know*"
- Many participants felt that changing their behaviour with regard to cancer (i.e. stopping smoking or using sunscreen) was a question of individual choice and did not want to be told what to do;
- There was some fear and fatalism expressed regarding cancer within the groups.

Survey Findings

Stage 2 and stage 3 survey findings are presented together within this report. The response rate for stage 2 was 47% and for stage 3 was 61%. Main findings show the following:

Knowledge of Cancer

- The average number of warning signs identified within this sample was 4.8 out of 7;
- On average, female respondents had a higher level of knowledge than male;
- Number of warning signs identified correctly varied according to age, gender, level of educational attainment, income, socio-economic status (SES) and housing tenure;

- On a sign by sign basis, there was variation in correct identification of warning signs or distracter signs in relation to gender, age and level of education.

Provision of Cancer Prevention Information

- Television advertising was considered by the sample to be the most effective method of providing cancer prevention information. This was advocated more strongly by those respondents with a high level of knowledge of cancer warning signs;
- There is variation in preference for the provision of cancer prevention information in relation to a range of demographics including gender, level of education and SES;
- A large percentage of the sample stated that they had no opinion on the most effective method of providing cancer prevention information.

Help and Support

- Help and support to prevent cancer was considered by respondents to be primarily through information such as leaflet and television advertisements. Secondary sources of support were considered to be the General Practitioner (GP) or the nurse at the health centre (practice nurse);
- 25% of respondents felt that there is no support available to help them prevent cancer;
- Women are significantly more likely than men to perceive the practice nurse as a source of help/support to prevent cancer;
- Women are also significantly more likely than men to view soap operas as a source of help/support to prevent cancer;
- Types of help/support required to help prevent cancer as identified by the sample included accurate and understandable information, an annual check up, practical help with diet and genetic testing.

Acquisition of Cancer Prevention Information

- In relation to the sources that people acquired cancer prevention information from, there were differences noted between those with a high level of knowledge and those with a low level of knowledge of cancer prevention;
- Respondents with a lower level of knowledge are more likely to acquire information about cancer prevention from people who have cancer by word of mouth;
- There was demographic variation in the sources used to acquire cancer prevention information with regard to age, gender, SES, level of education, marital status, housing tenure and rural/urban location.

Dealing with Cancer Prevention Information

- The majority of respondents stated that they would agree with cancer prevention information and think about making some lifestyle changes;
- 18% of respondents with low knowledge of cancer prevention and 11% with high knowledge of cancer prevention stated that they would agree with the information but do nothing about it;
- 1% of respondents with low knowledge of cancer prevention stated that they would disagree with the information;
- Predictors of dealing with cancer prevention information in a positive manner include gender and SES. Women and people in a higher socio-economic group are more likely to deal with cancer prevention information positively.

Attitudes and Beliefs about Cancer Prevention

- There is variation across all demographics with regard to attitudes and beliefs held about cancer prevention.

Skin Cancer Behaviours

- Subjective norm (an individuals beliefs about what significant other think of/about them with regard to behaviour) and perceived behavioural control (an individual's perception of their ability to carry out a behaviour) are predictors of a person's intention to use sunscreen;
- A favourable or unfavourable attitude to the sun does not predict sunscreen use within this sample;
- People with low intention to use sunscreen and those with high intention display different beliefs about the sun, sunbathing and its dangers.

Colorectal Cancer Behaviours

- Attitude, subjective norm and perceived behaviour control are predictors of intention to eat five portions of fruit and vegetables a day;
- People who display low intention to eat five portions of fruit and vegetables a day and those with high intention hold different beliefs about the cancer prevention properties and usefulness of eating five portions of fruit and vegetables every day.

Lung Cancer Behaviours

- Attitude, subjective norm and perceived behavioural control (self-efficacy) are predictors of intention stopping smoking;

- The measure of perceived behavioural control (controllability) is not a predictor of intention to stop smoking within this age group;
- An unfavourable attitude to smoking and its effects is a predictor of intention to stop.

Conclusion

This study has explored the knowledge, attitudes and behaviours of people in mid-life towards cancer prevention. It has uncovered a range of findings in relation to the provision and acquisition of cancer prevention information in this age range that will assist in the effective targeting of such information to members of the public in this age range. Furthermore, the study has provided insight into the salient attitudes and beliefs that need to be targeted within this age group to endeavour to effect behaviour change.

Priority groups have been identified as single men and those people in a low socio-economic group. Findings from this study can be used to effectively target these groups within the necessary information in a method advocated by these groups. Evaluation of these methods in effecting an increase in knowledge or behaviour change will be necessary. This targeting of sub-groups within the population should be mirrored in all other groups. This study has also pointed to further necessary research to provide specific insight into issues arising from this study. This further research is outlined in detail in the recommendations section of the report.

The outcomes from this study should be used to inform policy and identify strategies to enhance the cancer prevention knowledge and actions in this population. In turn, it is anticipated that this will have an impact on cancer deaths and diagnoses in the future.

Recommendations

A series of recommendations have arisen from the findings of this study as follows:

Priority Groups

1. Priorities for the targeting of information and education on the warning signs of cancer should be:

    - Single men;
    - People in lower SES groups.

Provision of Information

2. A strategy should be developed to raise this population's knowledge of cancer warning signs so as to promote recognition of early signs of cancer.

3. A clear, concise message of the warning signs of cancer should be communicated to all men in this age group with the immediate priority being single men

4. The risks posed by cancer to this age group should be communicated clearly and concisely and risk factors, including age, should be widely publicised.

5. Cancer prevention information should continue emphasising the progress made in the successful treatment of cancer. Statistics about risk and survival should be communicated accurately.

6. Cancer prevention leaflets should be distributed and made available in a wider range of public places such as supermarkets, churches or community centres.

7. Sources of support to prevent cancer should be communicated to people within this age band with particular attention placed on women in the age band 35 to 44 years.

Targeting of Information

8. Attitudinal profiles of sub-groups within this population should be used to inform the targeting of cancer prevention information with the aim of changing behaviour.

9. Cancer prevention information should be tailored for sub-groups within this population. It should be communicated in a meaningful manner as suggested by each sub-group. More accurate targeting of lower SES groups needs to be developed based on the premise that media sources are not highly advocated by this group.

10. Profiles of low intenders should be used as a basis for targeting information with the aim of changing their attitudes and behaviours towards cancer.

Positive Action

11. Consideration should be given to developing strategies to help men feel more comfortable with attending health centres for appointments with the GP or nurse.

12. Consideration should be given to strategies to help people in a lower socio-economic group approach their health in a more positive manner and to empower them to take control of their own health.

13. Strategies should be introduced to empower people in mid-life to take control of their health emphasising, where feasible, what they *can do* instead of what they *shouldn't be doing*.

14. Access to gymnasiums and sports facilities should be improved and subsidised as necessary to encourage healthy lifestyles within this age group. Further research should be undertaken to assess if this is effective in levels of fitness, health and reduction of weight.

15. Positive perceptions about eating five portions of fruit and vegetables a day need to be promoted to change the attitudes of low intenders. Strategies should be put in place to dispel myths surrounding fruit and vegetable intake and make portion sizes clear and unambiguous.

Further Research

16. Further exploration should be undertaken into the effect that the cost of sunscreen has on the intention to use it to prevent skin cancer.

17. The complex relationship between women and the sun, sunbathing and using sunscreen needs to be explored. Additionally, reasons why fake tan does not compensate for lying in the sun should be included in this exploration.

18. Reasons need to be explored as to why heavy smokers in all sub-groups within this age group, especially people in lower socio-economic groups continue smoking. Research needs to be undertaken to examine what can be done to help them stop and what tactics will work to help the wider population in each of these sub-groups.

19. Further exploratory work should be undertaken with people who hold the attitude of '*not wanting to know'* to uncover the salient beliefs that need to be changed.

20. The reasons why housewives and househusbands have an elevated level of knowledge of cancer warning signs needs further exploration.

21. Further research should be undertaken to explore the need for a cancer prevention role within primary care.

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INTRODUCTION

Cancer is used as a generic term to describe over 100 diseases that can affect any part of the body. Other terms used to describe it include malignant tumours and neoplasms. The extent of the disease is demonstrated by the fact that more than 11 million people worldwide are diagnosed with cancer each year. It is estimated that by the year 2020 cancer will account for 16 million new cases every year (World Health Organization (WHO), 2006). Annually, cancer accounts for 13% of the 58 million deaths worldwide (WHO, 2006).

THE NATURE OF THE PROBLEM

The latest available statistics for cancer deaths are for the year 2003. In that year, 154,547 people in the United Kingdom (UK) died from cancer representing 26% of all UK deaths (Cancer Research UK, 2006). In Northern Ireland in 2003, cancer was responsible for 3,757 deaths, which accounted for 25% of all deaths that year (Cancer Research UK, 2006). This appears to be part of an ongoing trend showing slight increases in cancer deaths overall with approximately 9,000 people diagnosed with cancer and around 3,750 deaths each year in Northern Ireland due to cancer (Cancer Research Northern Ireland, 2006).

Table 1 shows the most common cancer sites for men and women in Northern Ireland in 2003 (Cancer Research UK, 2006).

Table 1: Common cancer sites for men and women in Northern Ireland in 2003

	Men	**Women**
Most common cancer site	- Lung - 482 deaths in 2003 - 25% of all male deaths from cancer in 2003	- Lung - 328 deaths in 2003 - 18% of all female cancer deaths in 2003
Second most common cancer site	- Bowel - 252 deaths in 2003 - 13% of all male deaths from cancer in 2003	- Breast - 287 deaths in 2003 - 16% of all female cancer deaths in 2003
Third most common cancer site	- Prostate - 217 deaths in 2003 - 11% of all male deaths from cancer in 2003	- Bowel - 212 deaths in 2003 - 12% of all female cancer deaths in 2003

The two most common non-gender specific cancers are lung cancer and bowel cancer. Female deaths from lung cancer have now overtaken deaths from breast cancer, which had been the most common cancer site for women in recent years. There has been a 2% increase in female deaths from lung cancer since 2001 (Cancer Research UK, 2006). For women in Northern Ireland, the overall death rate from cancer is twice the Western European average and increasing (DHSSPS, 2002; 2005).

On examination of diagnoses of cancer, statistics compiled by the Northern Ireland Cancer Registry (NICR) show that in 2003 there were 9,219 new cases of cancer. This figure has been growing steadily since 1993. Almost equal numbers of these cases were men (n=4,604) and women (n=4,615). Broken down into the two most common non-gender specific cancers, there were 845 new lung cancer cases in 2003, 508 cases occurring in male and 337 in female cases. Lung cancer figures for new diagnoses show slight but steady increases over the last ten years (NICR, 2006). In relation to colorectal cancer, there were 995 new cases diagnosed in 2003. On the 10 year period this showed an increase for men (n=556, 2003) and a slight decrease for women (n=439, 2003).

Interestingly, the cancer showing the biggest increases in diagnoses in Northern Ireland is skin cancer. According to 2003 figures, skin cancer is now the most common cancer in the province, accounting for 25% of all cancers (Ulster Cancer Foundation, 2003; NICR, 2006). In 2003, 81 new male cases and 127 new female cases of malignant melanoma were diagnosed showing a steady increase over the last 10 years. Over the same period, larger increases were note in cases of non-melanoma skin cancer with 2,414 new cases of non-melanoma skin cancer in 2003 (NICR, 2006); 1,291 male and 1,123 female. Between the years of 1993 and 2001, there were 7,772 men and 7,592 women receiving treatment for non-melanoma skin cancer in Northern Ireland (NICR, 2006). As this cancer is preventable, survival rates are very high; nonetheless the figures give cause for concern.

CANCER PREVENTION AND CONTROL

Within the field of health promotion, cancer prevention is understood to describe educational, policy and infrastructural initiatives and interventions. There is no doubt that prevention is the most important and reliable cancer fighting strategy that exists today. The National Cancer Institute (2006) has stated that as many as 80% of all cancers are due to identified factors, and therefore are potentially preventable. It is estimated that only 5-10% of all cancer cases are inherited, up to 30% are due to tobacco use, and between 35-50% are due to dietary factors (National Cancer Institute, 2006).

Furthermore, the WHO (2006) stated that prevention offers the most cost-effective long-term strategy for the control of cancer worldwide. In May 2005, the WHO adopted the Resolution on Cancer and Control (WHA58.22), which includes a Global Cancer Control Strategy. This resolution was passed in direct response to the urgency surrounding the rising incidence of

cancer worldwide. The overarching aim of this strategy is to strengthen and fast-track knowledge of prevention into public health action.

KNOWLEDGE & ATTITUDES: CANCER PREVENTION

Surprisingly, few studies have been undertaken on issues relating to knowledge and attitudes of the public in relation to cancer prevention. Those that do exist tend to focus on either prevention of cancer in specific bodily sites or to educational and behavioural interventions aimed at addressing specific cancer risk factors. There has been no research into the knowledge and attitudes of people in mid-life to this issue in Northern Ireland.

A limited body of research has been undertaken in the United Kingdom (UK) into the attitudes, knowledge and behaviours of the public to cancer prevention in general. From the extant literature, it is clear that there is a need for public education on cancer prevention and a raising of awareness regarding the many different forms of cancer (Wetter *et al.*, 2005; Branstrom *et al.*, 2004; McCafferty *et al.*, 2003). As it is difficult to ascertain any identifiable effect of blanket cancer prevention initiatives, the literature suggests that specific targeting of social and specific age groups may be required. This would be made easier and more effective if the knowledge, attitude and behaviours of such groups were known. Such knowledge could make cancer education about prevention more effective.

Many international studies have explored the general public's awareness of the signs and symptoms of cancer. Some were undertaken in the UK but little local research has been carried out in Northern Ireland. Findings from the vast majority of these national and international studies show that the level of awareness of the signs and symptoms of cancer among samples of the general public is worryingly low (Bostick *et al*., 1993; Katz *et al*., 1995; Nichols *et al*., 1996; Rebello Palancia *et al*., 1996; Breslow *et al*., 1997; Jadalla & Sharaya, 1998; Paul *et al*., 2003; Wardle *et al*., 2001; Brunswick *et al*., 2001; Ratnasinghe *et al*., 2001; Cetingoz *et al*., 2002).

In 2001, the awareness of the UK public aged over 18 was assessed in relation to the risk factors for common cancers (Wardle *et al.*, 2001). Interviews were carried out with 3,693 randomly selected members of the public. Findings indicate that out of 15 well-established associations between risk factors and cancers, the average number identified correctly was five. The findings from this study raise considerable concern about public understanding of well-established causes. As part of the same study, Brunswick *et al.* (2001) reported findings showing that on average their respondents identified 4.2 of the seven warning signs of cancer,

with only 1.6% of the respondents identifying all seven warning signs. The authors concluded that only one in ten of the UK population could recognise the seven warning signs for cancer.

Other UK research studies showed similar findings to Wardle *et al.* (2001) and Brunswick *et al*. (2001). However, these are focused on specific cancers rather than the public's overall knowledge of cancer risks (Ling *et al.*, 2003; Kadra & Oakshott, 2002; Amir *et al.*, 2000; Warnakulasuriya *et al.*, 1999a; Thomas & Clark, 1998).

KNOWLEDGE & ATTITUDES: CANCER PREVENTION IN NI

No specific research has been carried out in Northern Ireland on the knowledge and attitudes of people in mid-life to this issue. Of the few studies that have been undertaken, these have related to either prevention of cancer in specific sites, male cancers, perceptions' of health professionals with regard to cancer prevention or on educational and behavioural interventions aimed at addressing specific cancer risk factors (Spiers *et al.*, 1999; Irish Cancer Society, 1999; Fleming *et al.*, 2001). Conclusions from these studies stated that there is much to be done to educate the Northern Ireland public about cancer prevention. This is evidenced in the fact that though skin cancer is the most common form of cancer in Northern Ireland and one of the most preventable, one person in seven does not use a sunscreen (BBC, 2001).

CANCER PREVENTION BEHAVIOURS

Little empirical research has been undertaken in Northern Ireland in relation to the behaviour of people with regard to cancer prevention. Some evaluative research was undertaken by the Health Promotion Agency for Northern Ireland in relation to campaigns and initiatives (HPANI, 1999). Findings showed that such campaigns have encouraged people to, for example, stop smoking or increase their consumption of fruit and vegetables. However, other international research findings indicated that campaigns have little long-term identifiable effect on people's behaviour (Cameron & McGuire, 1990; Borland *et al.*, 1991; MacKie & Hole, 1992; Richardson *et al.*, 2002). Questions remain unanswered with regard to how best to provide cancer prevention information and education that will encourage people to change their behaviour and adopt cancer prevention measures. Some researchers believed that focused, targeted initiatives and interventions, such as those with certain age groups or a specific social grouping are most successful (Goldsmith & Sisneros, 1996; Robins-Sadler *et al.*, 2000).

There has been no comprehensive research undertaken to date to answer the following questions: What way do people want to receive cancer prevention information and

education? How do they deal with the messages provided? What is their attitude to cancer and cancer prevention? Without the answers to these questions and many more, the provision of cancer prevention information and education will have difficulty achieving its targets.

OPERATIONAL DEFINITION OF MID-LIFE

There is no universal agreement about where mid-life starts and ends. Therefore, for this study, it was decided that mid-life refers to the period covering 35 to 54 years of age. It is important to recognise that this definition of mid-life spans a wide range of experience and life stages. According to the latest census data for Northern Ireland (2001), there are 447,864 individuals between the ages of 35 to 54 years. This represents almost 27% of the population (NISRA, 2003).

WHY MID-LIFE?

There is no doubt that the majority of deaths from cancer occur in the older age groups. More than three-quarters of deaths from cancer arise in people aged 65 years or over. Although there are fewer deaths from cancer in the younger age groups, proportionally cancer is even more important as a cause of death. In adults under the age of 65, more than 1 in 3 deaths (37%) are attributable to cancer (Cancer Research UK, 2006). When the statistics are analysed for gender, the proportion rises even higher for women with almost 1 in every 2 deaths (47%) caused by cancer in adult women under 65.

In the year 2002, 38,273 people between the ages of 35 to 54 were diagnosed with cancer in the UK. This accounted for 13% of all cancer diagnoses in that year (Cancer Research UK, 2006). The latest figures for Northern Ireland show that the incidence of cancer was 11,419 cases for people aged 35-54 over the period 1993-2001 (NICR, 2006). Table 2 illustrates these figures.

Table 2: Total incidence (1993-2001) in people aged 35-54 in Northern Ireland

	Age band			
	35-39	40-44	45-49	50-54
Men	517	745	1266	1989
Women	935	1263	1886	2818
Total	1506	2008	3152	4807

STUDY RATIONALE

It is clear from the research that has been undertaken that the knowledge, attitudes, and behaviour of the general public with regard to cancer prevention needs to be addressed through education and intervention. No study to date has assessed these parameters for people aged 35 to 54 in Northern Ireland. The absence of this evidence means that it is difficult to target cancer prevention messages with any identifiable effect. This is important due to the fact that as much as 80% of all cancers being potentially preventable (National Cancer Institute, 2006) and prevention is the most important and reliable cancer fighting strategy that exists today. Lung and bowel cancer have been chosen as they are among the top three most common cancers for both men and women in Northern Ireland. Skin cancer has also been chosen because of the rapid increases in non-melanoma skin cancer diagnoses. The outcomes from this study will be used to inform policy and identify strategies to enhance the cancer prevention knowledge and actions in this population. In turn, it is anticipated that this will have an impact on cancer deaths and diagnoses in the future.

STUDY AIM AND OBJECTIVES

The aim of this study was to explore the stated knowledge, attitudes and behaviours of people in mid-life (between 35 and 54 years of age) in Northern Ireland with regard to cancer prevention measures.

The objectives of the study were:

- To explore the knowledge of people in the mid-life stage to cancer and its prevention;
- To explore the provision and acquisition of cancer prevention information within this age group;
- To explore generic attitudes of people in this age group to cancer and its prevention;
- To explore the behavioural intentions of people in the mid life stage to prevent cancer in relation to attitude, subjective norms and behavioural control;
- To identify actions that will enhance cancer prevention measures with this population.

KEY FINDINGS FROM THE LITERATURE

Level of knowledge

- Most studies exploring the general level of knowledge of cancer among the public have highlighted the low level of knowledge that exists. Studies carried out in the US have reflected this finding over the last decade (Bostick *et al.*, 1993; Katz *et al.*, 1995; Nichols *et al.*, 1996; Breslow *et al.*, 1997). Other international studies also echoed these findings (Hancock *et al.*, 1996; Fitch *et al.*, 1997; Paul *et al.*, 2003).
- The single UK study focusing on the general public's knowledge of cancer support the findings of US studies which showed a low and worrying level of cancer awareness among the general public (Wardle *et al.*, 2001).
- Only one study carried out in Spain (Rebello Palancia *et al.*, 1996) uncovered findings that contrast with this trend.

Knowledge and Attitudes with regard to Lung Cancer

- While there is substantial international research literature on attitudes to smoking and risk perception (Lui & Hsieh, 1995; Ross & Taylor, 1998; Houfek & Atwood, 2003), there is a dearth of empirical studies on knowledge and attitudes with regard to lung cancer in the literature.
- To date, no studies have been undertaken in the UK on knowledge and attitudes with regard to lung cancer.
- All international studies on lung cancer are in agreement that the most frequently recognised cancer risk is smoking.

Knowledge and Attitudes with regard to Colorectal Cancer

- Studies exploring people's knowledge and attitudes to colorectal cancer have been appearing more frequently in the literature over the last ten to fifteen years. This is consistent with the increases in rates of bowel cancer worldwide. Most of these studies focus on knowledge, intention and attitudes with regard to colorectal cancer screening.
- Studies showed that in general knowledge of colorectal cancer warning signs are very low (McCafferty *et al.*, 2003).
- For many decades the link between cancer and diet has been internationally recognised (WHO, 1990). The importance of this link is evident in the fact that a trans European study has been funded to try to answer questions about cancer and diet (EPIC, 500,000 respondents, 10 different countries).

- Many research studies in the UK have acknowledged that adults do not consume the recommended amount of fruit and vegetables each day (Gregory *et al.*, 1990; Billson *et al.*, 1999; Baker & Wardle, 2002).
- Findings from studies in the US and UK showed that the public are unaware of the recommended guidelines on fruit and vegetable consumption (Cotunga *et al.*, 1992; Patterson, 1995; Baker & Wardle, 2003).

Knowledge and Attitudes with regard to Skin Cancer

- In recent years there has been a dramatic increase in the prevalence of skin cancer worldwide. Non-melanoma skin cancer is now the most common cancer in the UK accounting for a quarter of all new cancer cases (Cancer Research UK, 2006).
- There has been a large amount of research literature published on skin cancer in recent years, which is in direct relation to the increase in skin cancer worldwide. Australia and USA have been the leaders in this field and it is probable that this is due to the increase in the rates of skin cancer in these countries.
- Many published studies showed that there is a reasonable level of knowledge regarding skin cancer. However, this knowledge does not appear to translate into skin cancer prevention behaviours (Gerbert *et al.*, 1996; Paul *et al.*, 2003; Stanton *et al.*, 2004).
- Many studies highlight the while sunscreen is the most recognised and used form of sun protection, it is being used in isolation and this at odds with skin cancer prevention education (Schofield *et al.*, 2001; Jackson *et al.*, 1999).

Predictors of Cancer Prevention Knowledge

- Predictors of cancer awareness and knowledge are clearly evident in the literature. These predictors include level of education, gender, socio-economic status, cultural background, fear and fatalism (Katz *et al.*, 1995; Brelsow *et al.*, 1997; Kiekbusch *et al.*, 2000; Wardle *et al.*, 2001; Cetingoz *et al.*, 2002; Wetter *et al.*, 2005; Huisman*et al.*, 2005).

Health Information

- The availability of health information has expanded dramatically over the last two decades (Hollander, 2000).
- A major implication of the consumer health movement has been that individuals are compelled to be more active respondents and decision makers in their own health care (Andrews *et al.*, 2005).

Sources of Information

- In relation to sources of information, there is evidence to show that people use medical books, television, radio, narratives and magazines to acquire health information (Carlsson, 2000; Henwood *et al.* 2003; Basch *et al.* (2004); Talosig-Garcia & Davis, 2005).
- There is evidence to show that while women appear to prefer verbal information from health care providers, they are not always satisfied with this information (Rees & Bath, 2000).
- Studies showed that there is a 'trust' issue regarding health related information and that the doctor is the most trusted source of information (Hesse *et al.*, 2005; Friedman & Hoffman-Goetz, 2003; Rees & Bath, 2000).

Internet

- Greater accessibility to vast quantities and varieties of information via the Internet has changed how people seek health information (Hesse *et al.*, 2005; Neuhauser & Kreps, 2003; Rice, 2001).
- Studies showed that the perceived confidentiality afforded by the Internet is attractive to users in that it allows awkward, sensitive or detailed questions to be asked without the risk of facing judgement, scrutiny, or stigma (Cotten & Gupta, 2004; Eysenbach & Diepgen, 1999; Gray *et al.* 2005).
- People who are less likely to seek information on the Internet are older, have a lower socio-economic status and a lower level of educational attainment (Cotton & Gupta, 2004).
- Studies undertaken in relation to the communication of cancer prevention information on the Internet have concluded that high level reading skills are necessary to understand the presented information (Berland *et al.*, 2001; D'Alenssandro *et al.*, 2001; Graber *et al.*, 1999).

Complexity of Information

- Studies show that there is an unaddressed issue regarding the complexity of the information provided to the public from all available sources (Williams, 1995; Mancini *et al.*, 2005).

Accuracy of Information

- There was considerable concern expressed about the accuracy of information, with particular emphasis on Internet material (MacDonald & Hoffman-Goetz, 2002; Newnham *et al.*, 2005).

- Communication between patient and doctor and/or health professional is undergoing a massive change and that this is resulting in shared decision making (Briss *et al.*, 2004; Sheridan *et al.*, 2004; Harrington *et al.*, 2004).

Preferences for Health Information

- Different age groups (Astrom, *et al.*, 2000; Leydon *et al.*, 2000), genders (Neame *et al.*, 2005), levels of educational attainment (Miessner *et al.*, 1992; Carlsson, 2000), ethnic group (Talosig-Garcia & Davis, 2005) have different preferences in relation to health information.

Health Behaviours

- Health behaviours are generally regarded as behaviours related to the health status of an individual (Ogden, 2004) and have been described by Kasl and Cobb (1966) as aiming to prevent disease.
- Sorensen *et al.* (2003) suggested that social context must be incorporated into health behaviour campaigns and interventions and stated that "*social contextual factors cut across multiple levels of influence*" (p.188).
- People who have a higher level of educational attainment, have a higher income and consequently higher economic status engage in fewer high risk health behaviours (Sorenson *et al.*, 2003; Chavez *et al.*, 2003; Sorensen *et al.*, 1999; Andersen & Armstead, 1995; Kriegler *et al.*, 1993).
- Evidence shows that public health approaches to changing people's health behaviours has had some effect (Audrain-McGovern *et al.*, 2003).
- The national and international literature reporting on the evaluation of public campaigns on cancer prevention has emphasised that they can produce positive outcomes but that these results are inconsistent (McClendon *et al.*, 2002).
- There is evidence to suggest that the 'one size fits all' approach to cancer prevention is not effective (Taylor *et al.*, 1995; British Nutritional Foundation, 2004) and that tailored campaigns and interventions are more successful (Sorensen *et al.*, 2002; Baker & Wardle, 2002).

Skin Cancer Behaviours

- Much of the research on skin cancer preventive behaviours and the effect of educational campaigns and interventions have been undertaken in Australia and the USA (Borland *et al.*, 1991; Smith *et al.*, 2002; Marks *et al.*, 2004). Only a small amount of research has been undertaken in the UK and Europe (MacKie & Hole, 1992; Cameron & McGuire, 1990).

- Evidence from Australian studies showed that through the use of sustained educational campaigns and interventions there have been major changes in attitudes and behaviours in relation to skin cancer (Marks, 2004). However, there has been a noticeable slowdown of these changes in recent years and Marks (2004) suggested that this illustrates the necessity of a sustained and ongoing campaign.

Colorectal Cancer Behaviours

- The consumption of fruits and vegetables reduces the risk of major cancers (Steinmetz & Potter, 1991; Block *et al.*, 1992; van't Veer *et al.*, 2000).
- A plethora of research has been undertaken in the last fifteen years on increasing fruit and vegetable consumption as a preventive behaviour for colorectal cancer much of which has used randomised controlled trials.
- Internationally, randomised controlled trials using an educational and/or nutritional intervention have shown positive results (Blumenthal *et al.*, 2005; Ellis *et al.*, 2005; Lao & Brenner, 2004; Baker & Wardle, 2002; Tilley *et al.*, 1999; 1997; Taylor *et al.*, 1995).

Lung Cancer Behaviours

- There is no existing literature reporting studies that aim to prevent lung cancer. As it is accepted that the major cause of lung cancer is tobacco smoking, studies have tended to focus on interventions to help smokers quit (Moher *et al.*, 2005; Roseby *et al.*, 2002; Secker-Walker at al., 2002; Thomas, 2002).
- Most research undertaken on smoking cessation used a randomised controlled trial design.
- Settings for these studies have included community (Hancock 1995; Schorling *et al.*, 1997; Secker-Walker *et al.*, 2002); workplace (Lang *et al.*, 2000; Terawaza *et al.*, 2001); nursing interventions (Miller, 1997; Bolman *et al.*, 2002); family and carer programmes (Roseby *et al.*, 2002); school settings (Thomas, 2002).
- From all the studies reviewed on smoking cessation, there is a notable absence of targeting of smokers through the prevention of lung cancer.

Success in Changing Behaviour

- Research studies illustrate mixed results in terms of the success of cancer prevention interventions to change behaviour.
- Most studies aiming to change health behaviour in relation to cancer prevention reported minimal or modest success (Cameron & McGuire, 1990; Borland *et al.*, 1991; Arveux *et al.*, 1992; Kiekbusch *et al.*, 2000; Tamir *et al.*, 2000).

- Other studies reported significant success (MacKie & Hole, 1992; Goldsmith & Sisnoros, 1996; Robins Sadler *et al.*, 2000; Richardson *et al.*, 2002).
- The crucial distinction between these two types of studies centres on the importance of culturally appropriate strategies and active community involvement in the education or intervention.

RESEARCH DESIGN

The study used a mixed method research design incorporating the following stages:

1. Exploratory focus groups
2. Representative survey
3. Volunteer sample survey

METHODOLOGY

Stage 1: Focus Groups

The first stage of data collection used exploratory focus groups.

Respondents

Respondents approached to take part in the focus groups for this study had to meet the following inclusion criteria:

- Either gender;
- Aged between 35 and 54 years of age at the time of the study.

The exclusion criteria were that respondents must not have had a past or a current diagnosis of cancer. The rationale for excluding such people centred on the fact that they would have an elevated knowledge of cancer and that their attitudes and behaviours would differ from a member of the public who did not have or previously have a cancer diagnosis. While this would be a very interesting sub-group to research, it was outside the remit of this study.

Access to focus group sample

Many recruiting routes of were explored and access through the four Health and Social Services Boards in Northern Ireland proved to be a successful method. The Boards were willing to send out a contact letter on the researcher's behalf to members of the public inviting them to take part in a focus group relating to knowledge, attitudes and beliefs about cancer prevention. Individuals responded directly to the researchers where a suitable venue, time and date was arranged.

Design of focus group schedule

A comprehensive literature review was undertaken prior to the beginning of this stage. The focus group schedule was designed based on emerging themes from the literature. Experts from the Ulster Cancer Foundation were also involved in the design of the schedule as were a panel of appropriate academics from the University of Ulster.

Piloting of focus group schedule

The piloting of the focus group schedule was undertaken with a convenience sample of people aged 35 to 54. The group contained five respondents. Minor changes were made to the language used within the schedule and to the introduction and information provided at the beginning of the focus group.

Sampling

With regard to the constitution of the focus groups, four mixed gender groups, one male-only group and one women-only group were undertaken to gather exploratory data to address the research objectives. The researcher believed that data saturation had been reached after completion of these six focus groups.

Data analysis

The semi-structured focus group schedule used to shape the focus groups gave some structure to the data collected. Additionally, the data were intended to inform the development of the survey stage of the study. For these reasons, a structured approach to analysis was favoured as opposed to a more naturalistic approach. Miles and Huberman's (1994) structured approach to data management was employed to provide an appropriate method of analysis for the data collected.

Inter-rater reliability

Inter-rater reliability refers to the independent coding of data by two or more researchers to check on agreement. Accepting that all forms of analysis is a form of interpretation and that two people's interpretation is never going to be identical, it was decided that the process of content analysis would be undertaken independently of the study researcher by an academic with expertise in this area. Two transcripts were reviewed blind by this academic to ensure inter-rater reliability. Most of the themes identified by the independent reviewer were the same as those identified by the researcher. There were some differences in interpretation but these were considered minor. The process did confirm that the data were reliable in so far as two researchers elicited the same themes.

Stage 2: Postal Survey

The second stage of the study was a large scale postal survey to members of the public to explore their attitudes, knowledge and behaviours with regard to cancer prevention. Despite a comprehensive search for a suitable existing tool to use within this stage, none were found. Therefore, the literature and the findings of the focus groups informed the design and content of the survey questionnaire.

Design of questionnaire

The questionnaire had seven sections presented on three pages printed front and back.

1. Section one focused on an exploration of respondents' knowledge of cancer warning signs. Discussion with Professor Jane Wardle at University College London led to the incorporation of a section of a questionnaire that she had tested extensively across the UK. From a list, respondents are asked to identify the seven warning signs of cancer (European Code Against Cancer).
2. Provision of information.
3. General statements on cancer prevention.

The next three sections focused on skin cancer, bowel cancer and lung cancer separately. These sections examined target behaviours for each cancer:

4. Skin Cancer – target behaviour – using sun cream;
5. Bowel Cancer – target behaviour –eating five portions of fruit and vegetables a day;
6. Lung Cancer – target behaviour – stopping smoking.
7. Demographics

Pilot Study

A pilot study was undertaken in March 2005. One hundred and fifty questionnaires were sent out to a random selection of people from the edited electoral register. In total 70 were returned providing a response rate of 47%. Minor language changes and re-formatting of the questionnaire were undertaken after piloting.

Reliability: Test-Retest

Results from the test-retest procedure showed that for Section 2 most of the answers to both open and closed questions remained the same., While there was some slight variations in answers to Sections 3 to 6 inclusive, the mean of each statement was unaffected by these changes. The variations were likely to be caused by a respondent selecting "agree" instead of "strongly agree" or "disagree" instead of "strongly disagree". Taking into account these reasons, the questionnaire was considered to be reliable.

Access to survey sample

Many options were explored in relation to gaining access to a sample of the public aged 35 to 54 years of age. These included databases held by the Central Services Agency, Health and Social Services Boards and Trusts, GPs and large employers and companies. Access through these options proved difficult. This was due to a variety of reasons which included ethical difficulties, age banding, exclusion of certain groups, time, and resource issues for people in these organisations. For example, if access had been through a large employer or company, unemployed people would have been excluded.

It was decided that the electoral register was the most inclusive way of administering the survey. The edited electoral register in Northern Ireland holds the names and address of 60% of the Northern Irish population categorised into districts and wards. The edited electoral register was purchased through the Northern Ireland Electoral Office. People in Northern Ireland have to consent to have their name and address on the edited electoral register and are aware that their details can then be used for research purposes. One of the major advantages of using the edited electoral register was that a rigorous sampling strategy could be employed in relation to a number of variables such as geographical spread.

Sampling

Data from population statistics for the last census before this study began were collated by the Northern Ireland Statistics and Research Agency (NISRA, 2001). They showed that there were 454,585 adults between the ages of 35 and 54 living in Northern Ireland. Using a confidence level of 95% and a confidence interval of 3, the target sample size was set at 1,065 for a representative sample size.

In total 5,000 questionnaires were sent to a stratified sample selected randomly within the strata of geographical location. Stratification was based on the organisation of the edited electoral register into electoral districts. These districts were then organised into Health and Social Services Board areas and then loosely into rural and urban districts. One rural and one urban district were randomly selected from each Health and Social Services Board area. This resulted in the selection of eight districts. Each district population was expressed as a percentage of all eight districts (total study population) using the numbers of identified voters. Districts were further split into wards. The numbers of people in each ward was expressed as a percentage of the total population of voters in that district. The same percentage of people was selected from each ward within each district. This was to ensure a representative spread. Equal numbers of men and women were selected randomly within each ward.

Inclusion and exclusion criteria

Inclusion criteria dictated that either gender could be included and that respondents should be aged between 35 and 54 years of age. Exclusion criteria excluded those people who have had or currently have a diagnosis of cancer. The reason for this exclusion has been alluded to in stage one above.

Administration of questionnaire

A cover letter was enclosed with the questionnaire outlining how the potential respondent's name and address had been accessed, a brief background to the study, instructions on what they were to do, exclusion criteria, contact details of the researcher, the free phone number for the Ulster Cancer Foundation helpline and an expression of thanks.

The questionnaire was printed on yellow paper as this is considered easier to see and read. A stamped addressed envelope was enclosed and a period of two weeks was given for completion and return of the questionnaire. A note and additional small stamped addressed envelope was also enclosed with the questionnaire asking respondents to fill in their name, address and telephone number if they would be willing to take part in a follow-up study which would constitute the final stage of this research. The additional stamped addressed envelope allowed return of the respondent's details independent from the questionnaire. This was to allow for total anonymity with regard to their questionnaire responses. Two follow up reminders were also sent to each respondent two weeks apart.

Selection of sub-sample

As discussed, the sample selection method used within the study inevitably led to many completed questionnaires being returned that were outside the age group of the study. As the questionnaires were returned, they were sorted into age bands and the sub-sample of respondents aged 35 to 54 were set aside for use in this study.

Data Analysis

The data from the returned questionnaires from the sub-sample was entered into the Statistical Package for Social Scientists (SPSS). Data were analysed using both parametric and non-parametric tests. Analysis included the computation of descriptive statistics for Sections 1, 2 and 3 as well as Chi-Square tests to test for relationships between variables. Regression procedures were also used to analyse the survey data.

Internal validity

In analysing the direct measures of the predictors, negatively worded variables were re-coded. An item analysis was carried out to establish internal consistency (Cronbach's Alpha). As internal consistency for most of the items was greater than 0.6, it was considered appropriate to include all those items in composite variables for intention, attitude, subjective norm and controllability.

Stage 3: Volunteer Sample Survey

Two hundred and sixty-seven respondents volunteered to take part in the final stage of the study. These respondents returned their contact details with the stage two questionnaire. All volunteers were sent a short questionnaire in the post. This questionnaire explored perceptions of help and support in further depth and their views on the provision of help and support from key informational sources. A leaflet on either skin or colorectal cancer or stopping smoking was included with the questionnaire and questions seeking views on the leaflet were included. Findings from the colorectal and skin cancer leaflet evaluations are presented in this report but unfortunately the response rate to the evaluation on the stopping smoking leaflet was very low and as such, these results have not been presented.

Data Analysis

The quantitative data from the returned questionnaires were entered into the Statistical Package for Social Scientists (SPSS) and analysed using descriptive and non-parametric tests. Qualitative data were transcribed verbatim from the questionnaires and content analysed using Burnard's (1996) approach.

ETHICAL ISSUES

Ethical approval for the study was granted by the University of Ulster Research Ethics Committee. Focus group respondents were asked to read a consent form carefully before signing and returning it to the facilitator at the start of the focus group. It was also explained to each respondent that they were consenting to take part in the focus group and for the focus group to be audio taped. All respondents were assured of confidentiality and that their name would not be attributed to any comment used in any resulting report or publication. Questionnaires used in stages 2 and 3 of the study were anonymous and confidentiality of responses was assured. In line with current research guidelines, informed consent to participate in the study was presumed on receipt of a completed questionnaire.

Due to the nature of the study and as it was necessary to exclude people who have or who have had cancer from the study, considerable thought was given to how best to do this in a manner that would not cause unnecessary hurt or distress. To exclude these people, an explanation was included in the cover letter of the survey explaining why a previous cancer related history might affect responses. The contact details of the researcher were also included in the letter for respondents to contact if necessary. The details of the free phone number of the Ulster Cancer Foundation's helpline were provided and their logo displaying the phone number also appeared on the cover letter. The helpline is manned by specially trained nurses with experience in cancer care and they were made aware of the dates on which the questionnaires were sent out.

Many recipients of the questionnaire did telephone either the researcher or the Ulster Cancer Foundation helpline. Some of these phone calls were in relation to aspects of the questionnaire and how their contact details were obtained from the edited electoral register. Other phone calls concerned people's fears about cancer and getting cancer and from people who have cancer and who wanted to talk about it. The researcher received hundreds of letters and notes of support for the study from people who had completed the questionnaire and many unsolicited donations for the Ulster Cancer Foundation.

FINDINGS

Focus Group Findings

The main findings from the focus groups are outlined under themed headings with quotes included to illustrate the points.

Low level of cancer awareness

It was apparent from the focus groups that there was generally a low level of awareness of cancer prevention among the respondents.

"I don't really know. I do try and find out but I am not really sure what my level of awareness would be" (P1).

Cancer prevention behaviours

Respondents were asked to identify what they felt were the most important things that they could do in their daily lives to prevent cancer. While many identified behaviours that were correct in relation to cancer prevention, there were also many that were questionable. Most respondents across all the focus groups were able to identify at least one cancer prevention behaviour. Only two males identified none.

Differences in level of awareness between men and women

There were differences in the levels of awareness of cancer prevention between the men and women within the focus groups. There was also a perception among the respondents that, in general, women were more aware of cancer prevention than men and that this was also true of all health related issues. One male respondent commented; *"Well, eating healthy foods, no stress and no smoking. Apart from that, I know nothing"* (P3).

In contrast, a female respondent commented;
"Oh yes, for me it is very interesting. I would be very interested now if they were giving some facts and telling me I should be doing this or something, then I would do it. Yes in relation to things like diet and exercise and just really general health and I think that cancer is a major part of this" (P7).

Awareness of health promotion initiatives

Focus group respondents were asked to discuss health promotion initiatives that they were aware of in relation to cancer prevention. Across all groups, without exception, long silences ensued when this topic was broached. Since the discussion had been free flowing up until this point, this could be interpreted as respondents not being able to recall any specific cancer prevention initiatives. Small scale poster and leaflet campaigns were discussed which respondents had noticed in their local health centre or gymnasium.

Discussion within the focus groups turned invariably to the larger campaigns such as the skin cancer campaign running on national television at the time that the focus groups took place. It was apparent from the discussion of these media campaigns that they had been noticed because of the shock tactics used. For example, in relation to a skin cancer television campaign, respondents commented:

P1: *"Well, there is a campaign on at the minute about skin cancer, the people are on holiday on the beach…"*
P4: *"Oh yes…"*
P2: *"And their skin is all black. It is absolutely horrifying. I think that this is what's needed. To hit hard and make people realize".*

Similarly, when the television smoking campaign was discussed, the same issues were referred to:

P1: *"The smoking one did stick in my mind. You know the one where they squeezed the stuff out of the artery?"*
P4: *"Yes but was that not for heart disease…"*
P1: *"Hmmm… I don't know but it sticks in my mind anyway. I think that was because it was shocking and disgusting. But I don't smoke anyway"*
P2: *"I don't remember it".*

Attitudes towards health promotion initiatives

Several overall perceptions appeared to emerge from the focus groups with regard to the respondent's perceptions of health promotion campaigns and initiatives. The first of these related to the belief that it does not really matter what or how cancer prevention campaigns and initiatives are delivered or who they are targeted at because it is an individual's choice whether to listen to or act on such information. This was a very strong message from many focus groups respondents. The feeling was that if an individual wanted to change their behaviour in relation to, for example, smoking or eating a healthy diet, they would do this because they wanted to and not because of a health promotion campaign or initiative.

"I think that there is a perception that people will just take in what they want to take in and ignore the rest. Like cherry picking the information that suits them at the time and disregarding the rest. People will only do what they want to do themselves" (P13).

An alternative perception from some respondents was that cancer prevention campaigns and initiatives did have some impact on people and helped to shape and change their behaviours.

P6: *"I think they do have an impact. I see a big change in people's diet. Fruit, yogurt, things like that. From what I see, people's diets are changing"*

P2: *"The Ulster fry used to be a standard meal and now it's not so much anymore"*

P1: *"Instead people have their cereal. Skimmed milk"*

P5: *"You will find that the diet issue is being attacked from every angle. Obesity is being made high profile and I think the links with cancer and being somewhat overlooked. Again I think it is what boxes that they are forcing people into. We are all individuals, no matter what you do. You can tell 20 people that they must eat five portions of fruit and vegetables a day and some people might say 'you are not telling me what to do'. It's an individual thing at the end of the day. And health information at the end of the day is general".*

Acquisition of knowledge about cancer prevention

There was much discussion within the focus groups as to how respondents acquired their knowledge of cancer prevention. The following sources of information were mentioned.

Figure 1: Sources of knowledge about cancer prevention

Television documentaries	Radio
Celebrities	Magazines
Internet	Leaflets
Soaps and dramas	Newspapers
Word of mouth	From people who have cancer
Books	From their children
Schools	

Provision of cancer prevention information

While this theme is intrinsically related to the acquisition of knowledge, respondents discussed at length how cancer prevention information was provided, rather than acquired. Consequently, the analysis of the transcript showed that this should be an additional category.

The main sources of cancer prevention information that the focus groups identified were the Internet, women's magazines, television programmes, leaflets and word of mouth. There was much debate about the benefits and drawbacks of using the Internet to look for cancer prevention information, with concerns relating to reliability and accuracy.

"The thing that would concern me about the Internet is the reliability of the information. There is quite a bit of contradictory information on there" (P23).

There was a strong perception within the groups, especially the male focus group, that the amount of information provided was sometimes overwhelming and that this caused people to ignore it. Male respondents felt that information should be concise and clear and that they would prefer to be told what the warning signs of cancer were so that they would know what to look out for.

Differences between men and women: provision of cancer prevention information

In relation to the provision of cancer prevention information, a marked difference was apparent between the male and female focus group members. The overall perception from female respondents was that because women attended cervical and breast screening, cancer prevention was more apparent to them. Many men expressed the opinion that they simply 'did not want to know'.

Lack of confidence in and trust in the information provided

In relation to the provision of cancer prevention information, a sub-theme emerged on the lack of confidence and trust that respondents had in the information available. Comments were made in relation to the reliability and veracity of the information. This shows a lack of trust in the information being provided from official sources.

P23: "What is right? And when will they change their mind about it?"

P25: "That's true and there's something else. I mean, like eating five bits of fruit and vegetables a day. What makes up one portion? I mean, is it one strawberry or twenty grapes? How much is one portion of vegetables? Does anybody really know? Do they really know?"

General agreement from the group...

P22: "And when will they tell us that they got it wrong? I know that's very negative but it is true. One day something is bad for you, the next it's ok again. You just get fed up with it".

Some of this related to the role of the General Practitioner, whom respondents felt should be making a much larger contribution to imparting cancer prevention information to their patients. Within the men only group, several comments were made in relation to this.

P4: "The doctor should be more proactive in providing it (information)"

P7: "Yeah but come on let's face it…. Doctors don't have time these days to even give you five minutes. They are not going to have time to start telling you all about cancer prevention and what you should be doing or not doing. I mean how reliable is the

information that they give you anyway. I bet you everyone here knows of someone who has gone to a doctor and been told that they have a cold or a virus and then six months later they are dead of cancer or something else that the doctor missed. I mean everyone can tell you a story like that. It's just not on but they don't have time to even do what they are supposed to be doing never mind starting to tell us about cancer and how to prevent it"

P4: "Yeah that's all true but they are in a prime position for this type of information and I really feel that they should be doing something".

Targeting of cancer prevention information

Respondents discussed the targeting of cancer prevention information. The over-riding theme across all focus groups was that cancer prevention information should be targeted at children in school. Respondents felt that it was probably too late for a lot of people in their age group to radically change their life-style. This appeared especially true of respondents in the upper age range of this group.

'It won't happen to me'….. 'I don't want to know'

Throughout all the focus groups, the feeling was expressed that there are many people who did not want to know anything about cancer prevention. One of the reasons for this was that they felt it would not happen to them. While this perception was discussed by all respondents in the groups, it was always discussed in relation to men. Female respondents felt that this was a perception held by men. Male respondents verbalised the fact that they knew people like this. Other male respondents stated that they themselves held this perception.

Changing behaviour

Most respondents felt that behaviour change was by individual choice and would not be decided by the amount of information provided on cancer prevention. Many expressed a 'don't tell me what to do' opinion. While respondents had mixed reactions to cancer prevention campaigns, they acknowledged that they had picked up some information from these types of initiatives.

The theme emerged regarding changing perceptions and behaviours as a result of family members or close friends being diagnosed with or dying from cancer. Respondents acknowledged that if this happened to them, they would be more inclined to change their lifestyle to help prevent cancer. The main reasons that respondents gave for changing their behaviours in relation to cancer prevention are outlined in Figure 2.

Figure 2: Reasons for changing behaviour

Desire to live longer	Family history of cancer
Wanting to stay young and healthy	Belief in early detection
General health	Seeing children grow up
Feeling better	Not being a burden on others

Fatalism and fear

Some focus group respondents appeared to have a fatalistic attitude with regard to cancer; most of these were men. This fatalism related to the attitude of 'having no guarantees' and 'anyone can get cancer, it doesn't matter what you do'.

"I mean there is natural radiation in the rocks. A Chernobyl cloud dropped over Northern Ireland so our mountains have radiation in them. It's in the environment, you know" (P16).

It would appear that this fatalistic attitude is rooted in fear. Some comments made by respondents illustrated that this fear prevented them from doing anything about cancer prevention as they would rather not face up to the reality of it.

"I mean, you want the information, but you don't want it. Do you know what I mean?" (P2).

The respondents expressing this fear and fatalistic attitude were those who had a family history of cancer.

Survey Findings

The stage 2 survey response rate was 47%. The overall response rate to the stage 3 volunteer sample survey was 61%. Results from both surveys will be presented together. The evaluations of the skin and colorectal cancer leaflets are presented in booklet one and booklet two which accompany this report. Demographic breakdown of the sample is included at Appendix 1.

Recognition of Warning Signs of Cancer

The average number of warning signs identified correctly for this sample was 4.8 out of the 7 proffered. On average female respondents identified 5 signs correctly and male respondents 4.4 signs correctly. The average number of warning signs correct for the younger age band was 4.7 and for the older age band was 4.9.

Age: The number of warning signs identified correctly increased from the younger age band of 35-44 to the older age band of 45-54 ($p<0.01$). This suggests that the older age group has a higher awareness of cancer warning signs.

Gender: Women identify correctly more warning signs than men ($p<0.01$).

Level of educational attainment: Respondents with a higher level of education can identify more warning signs correctly ($p<0.01$).

Income: When housewives are excluded from the analysis, respondents with a higher income can identify more cancer warning signs correctly ($p<0.01$).

Socio-economic status: Higher socio-economic status is associated significantly with higher knowledge of cancer warning signs ($p<0.05$). The socio-economic status variable is organised into seven categories - professional, employers/managers, intermediate/junior non-manual, skilled manual, semi-skilled, unskilled and unknown. Unskilled includes housewives and househusbands. Excluding them from the analysis increases the significance of the association ($p<0.01$). Housewives' knowledge of cancer warning signs is higher than that of other unskilled respondents. Reasons for this could include giving up employment in the short term for childcare purposes, career break, caring for a partner/family member, no need to continue working.

Type of accommodation: Higher level of cancer warning signs is associated with owning own home ($p<0.01$).

On a sign by sign basis, women were more likely than men to identify warning signs correctly. These included unusual bleeding or discharge, a change in bowel or bladder habits, a change in a wart or mole and a nagging cough or hoarseness. Older respondents (aged 45-54) were more likely to identify warning signs such as indigestion or difficulty swallowing, nagging cough or hoarseness and a sore that does not heal. Those respondents with a higher level of educational attainment were more likely to identify warning signs such as unusual bleeding or discharge, a change in a wart or mole and unexplained weight loss. Significance levels ranged from $p<0.01 – 0.05$.

Table 3: Signs identified as warning signs by percentage

	All	Men	Women
Warning signs			
Unusual bleeding or discharge	86%	77%	92%
Indigestion or difficulty swallowing	30%	33%	28%
A change in bowel or bladder habits	90%	84%	95%
A change in a wart or mole	95%	87%	99%
Nagging cough or hoarseness	35%	24%	42%
Thickening or lump on body	94%	94%	94%
A sore that does not heal	51%	48%	53%
Unexplained weight loss	91%	91%	91%
Distracter Signs			
Tiredness	29%	33%	28%
Poor appetite	25%	27%	23%
Bleeding gums	15%	12%	16%
Numbness in parts of your body	11%	17%	8%
Nausea or upset stomach	10%	14%	7%
Feeling weak in parts of your body	10%	17%	8%
Headaches	8%	7%	8%
Sore muscles	3%	7%	1%
Pain in your heart or chest	2%	4%	1%

Younger respondents (aged 35-44) are more likely to wrongly identify warning signs as tiredness, numbness in parts of your body, feeling weak in parts of your body and headaches. Men are more likely than women to wrongly identify warning signs as numbness in parts of the body, nausea or upset stomach, feeling weak in parts of the body, sore muscles or pain in the chest. Those with a lower level of educational attainment were more likely to wrongly identify warning signs as poor appetite, nausea or upset stomach and feeling weak body. Significance levels ranged from $p<0.01 – 0.05$.

Effective Methods of Provision of Cancer Prevention Information

Respondents were asked to identify what they thought was the most effective method of providing information about cancer prevention for their age group. Table 4 below shows the results split into responses from respondents with a high or low level of knowledge of cancer warning signs.

Table 4: Effective methods of provision by level of knowledge of warning signs

	Effective method of provision	High level of awareness	Low level of awareness
1	Television advertising	40%	36%
2	Television programmes	15%	12%
3	Leaflets	9%	10%
4	Newspaper articles	5%	4%
5	Magazine articles	5%	3%
6	GP or nurse at health centre	3%	6%
7	Billboards or poster campaigns	3%	1%
8	Group talks	2%	1%
9	Mailshots	2%	4%
10	Women's groups / well woman clinic	1%	1%
	Don't know	6%	12%

Television advertising was the most popular choice. High numbers of respondents in the high and low awareness categories identified it as the most effective method. Television programmes and leaflets were the next most effective methods identified. Information provided by a GP or nurse at a health centre was identified as ranking sixth and fourth by respondents with a high level of awareness and with a low level of awareness respectively. It is important to note that 6% of respondents with a high level of awareness and 12% of those with a low level of awareness stated that they did not know what the most effective method of providing cancer prevention information to their age group was.

Women are more likely to identify television programmes, television advertising, magazine articles, leaflets and GP/Nurse as effective sources of cancer prevention information. In contrast, men are more likely to identify newspaper articles as an effective way of providing such information. Respondents with a high level of education (degree or higher) were more likely to consider television advertising to be most effective for their age group. Furthermore, those with a lower level of education (primary school education only) are more likely to consider visiting their GP or nurse at their health centre as most effective for their age group.

Respondents with high socio-economic status are more likely to consider television advertising and magazine articles to be most effective for their age group. In comparison, respondents with low socio-economic status are more likely to consider leaflets to be the most effective way of providing cancer prevention information to this age group. The provision of information through newspaper articles, television programmes and visiting the GP or nurse did not have any significant associations with socio-economic status.

No Opinion on Effective Provision

Eighty-six respondents stated that they did not know what would be an effective way of providing cancer prevention information to their age group. These respondents were spread evenly across men and women (50%, n=43) and this was similar for age bandings (35-44; 55.8%, n=48 / 45-54; 44.2%, n=38). Most of those who answered 'don't know' had a low to moderate level of education (67.5%, n=58) and a low to moderate income (70.9%, n=61). There was little variability in these responses categorized by urban/rural living environment (urban; 48.8%, n=42 / rural; 51.2%, n=44).

The stage 3 survey probed this question further. Respondents were asked why they thought that there was a high percentage of people in their age group who did not have an opinion on the most effective method of providing cancer prevention information. Responses included:

1. People don't want to know; they don't think it will happen to them;
2. Apathy; complacency;
3. People are too busy with other things; they don't have time for their health;
4. Too much conflicting information;
5. Lack of information/too much information;
6. Too late for this age group; age group too young;
7. Fear;
8. This age group is not at risk.

Two of these emerging themes show both sides of the debate and illustrates the lack of agreement and uncertainty that exists within this age group on the provision of cancer prevention information. The first one is 'lack of information/too much information'. Those citing too much information commented;

"People are bombarded from too many sources; therefore no-one is picking up the message" (R37).

On the other hand, those giving lack of information as a reason stated;
"There is a major lack of information in accessible places, especially for men. For example, features in men's lifestyle magazines would be a good idea" (R36).

The other conflicting theme was 'too late for this age group/age group too young'. Respondents feeling that it is too late for this age group to start cancer prevention behaviours commented;

"Perhaps because many people my age think the damage is already done due to previous lifestyle habits etc and so any form of prevention information are too late. Also as we haven't grown up being warned about cancer dangers, we have no real issue about how we are told now" (R76).

Respondents believing this age group to be too young to start cancer prevention behaviours stated;

"The people in my age group believe that it will not happen to them because they are too young" (R74).

Acquisition of Knowledge about Cancer Prevention

From a list of fifteen media, respondents were asked to tick all those from which they acquired knowledge about cancer prevention. These were derived from the focus group data in stage one of the study. An '*other, please expand*' category was included to identify any information mediums that were not covered in the list. Only one additional 'other' category was indicated which was 'work' (n=58). Table 5 below shows these sixteen mediums split into high and low levels of awareness of cancer signs.

Respondents with a low level of knowledge are more likely to acquire their "information" from soap operas and people who have cancer. Respondents with a high level of knowledge are more likely to get their "information" from books and magazines.

Table 5: Acquisition of cancer prevention information by knowledge

Medium	High level of awareness	Low level of awareness
Television programmes	78%	74%
Magazines	64%	55%
Word of mouth	57%	60%
Leaflets	57%	53%
Television advertisements	51%	53%
Newspapers	51%	44%
From people who have cancer	44%	61%
Radio programmes	28%	24%
Books	26%	19%
Soaps	15%	23%
Internet	13%	13%
Celebrities	10%	13%
Radio advertisements	8%	8%
Other (work, employment, colleagues)	6%	4%
Schools (through their children)	3%	7%
From my children	3%	1%

Age: Respondents in the older age banding of 45-54 are more likely to seek information from celebrity sources, radio programmes and newspapers ($p<0.01$). Those respondents in the younger age banding of 35-44 are more likely to acquire information from word of mouth ($p<0.01$).

Gender: Women would be more likely to acquire information from books, magazines, leaflets ($p<0.01$). Men would be more likely to acquire cancer prevention information from radio programmes and radio adverts ($p<0.01$).

Socio-Economic Status: Respondents with a higher socio-economic status would be more likely to acquire their cancer prevention information from the Internet, books and newspapers ($p<0.01$). Those respondents with a lower socio-economic status would be more likely to acquire their cancer prevention information from television soap operas and leaflets ($p<0.01$).

Level of Education: Respondents with a lower level of education are more likely to acquire their cancer prevention information from television programmes including soaps ($p<0.05$), television adverts and people who have cancer ($p<0.01$). Those respondents with a higher level of education are more likely to acquire their information from the Internet, radio programmes and newspapers ($p<0.01$).

Marital Status: Single respondents are more likely to get their cancer prevention information from soap operas ($p<0.01$) than married respondents.

Type of accommodation: Respondents who own their own home are more likely to acquire their information from newspapers ($p<0.05$). Respondents who do not own their own home are more likely to acquire their cancer prevention information from television soap operas, magazines, leaflets and people who have had cancer ($p<0.01$).

Rural/urban: Respondents living in an urban area are more likely to get their cancer prevention information from leaflets ($p<0.01$).

Dealing with Cancer Prevention Information

Respondents were asked to rate how they dealt with cancer prevention information that they received. Table 6 below shows the percentage responses to the scale split into high and low levels of awareness of cancer warning signs.

Table 6: Dealing with cancer prevention information and knowledge

	High level of awareness	Low level of awareness
Ignore it	0%	2%
Agree with it but do nothing about it	11%	18%
Agree with it and think about making some lifestyle changes	73%	68%
Agree with it and change my behaviour	16%	11%
Disagree with it	0%	1%
Refuse to believe that it is correct	0.1%	0%

Respondents with a high level of knowledge are more likely to agree with the information and state that they either make lifestyle changes or think about making lifestyle changes.

Predictors of dealing with cancer prevention information in a positive manner include:

- Gender - women are more likely than men to deal with cancer prevention information in a positive manner ($p<0.01$).
- Socio-economic status - people with a higher socio-economic status are more likely to deal with cancer prevention information positively ($p<0.01$).

Help and Support

Respondents were asked in an open-ended question what support that they felt was available to help them prevent cancer. Responses were categorised into 21 categories and are presented below in percentages split into respondents with a high level of awareness of cancer warning signs and respondents with a low level of cancer warning signs.

Two hundred and sixty two respondents (25%) felt that there was no support available to help them prevent cancer. Sixty-one percent (61.8%, n=183) of these were in the younger age band of 35-44 years of age and almost 60% were women (59.5%, n=176). Most of these respondents had a low to moderate level of educational attainment (68.6%, n=203) and a low to moderate level of income (77.1%, n=228). There was little distinction in responses from those residing in a rural or an urban environment.

Similar demographic trends are noted for respondents who answered ‘don’t know’ to this question (n=251). More in the younger age band of 35-44 responded ‘don’t know’ (56.2%, n=136) and more women (57%, n=143). Again more respondents with a lower level of education (73.7%, n=185) and a lower income (82.9%, n=208) responded ‘don’t know’. There was little distinction between rural and urban addressees.

Table 7: Type of support available by knowledge of cancer warning signs

Type of support	High level of cancer prevention awareness	Low level of cancer prevention awareness
No support available	27.5%	28%
Don't know	20%	31%
GP	13%	15%
Media advertising	7%	7%
Leaflets	7%	5%
Screening	5%	4%
Well woman/well man clinics	3%	1%
Media/press	2%	0.3%
Cancer can't be prevented	2%	0.3%
Work based information sessions	1%	0%
Cancer charities	1%	0%
Health centre/doctors surgery based information	1%	1%
Internet	1%	0%
Health promotion agency	1%	0.3%
No smoking in public buildings	1%	1%
Little support for men	1%	1%
Family	0.4%	1%
From people who have cancer or had cancer	0.4%	0%
Support groups	0.3%	0.3%
Don't need any support	0.3%	0%
Helplines	0.1%	0%
Roadshows	0%	0.3%

The most prevalent responses for both men and women were 'no support available' and 'don't know'. Women were most likely after that to identify their GP (14%, n=92), advertising campaigns (7%, n=44), screening clinics (7%, n=44) and leaflets (6%, n=n=37) as existing and useful forms of support for preventing cancer. Men were most likely to identify their GP (13%, n=54), leaflets (7%, n=28) and advertising (6%, n=26). These results raised questions regarding respondents' perceptions of "support" to help prevent cancer and as a result this area was probed further within the volunteer sample survey.

What is understood by help and support in relation to cancer prevention?

Respondents were asked to consider the statement 'Because 80% of all cancers are potentially preventable, help for people to prevent cancer is important'. They were then asked 'What do

you understand by 'help' in relation to cancer prevention?' Responses were categorised into the following themes and rank ordered:

1. Information and advice;
2. Education;
3. Practical help with diet;
4. Screening;
5. Personalised help;
6. Help in workplace;
7. Improved and facilitated access to gym or sports facilities;
8. Sunscreen provided on the NHS.

Other respondents felt that help to prevent cancer could only be provided by oneself. Others expressed disbelief at the statement that 80% of cancers could potentially be prevented.

Existing Sources of Help and Support

The second section in the volunteer sample questionnaire identified for respondents six potential sources of cancer prevention information– GP, nurse at the health centre, leaflets, cancer charities, television advertisements and soap operas. These six sources were chosen because they were identified by the highest percentage of respondents in the phase 2 survey. Respondents were asked to indicate for each source if they felt that it would help them to prevent cancer. If so, they were asked to expand on how it was of help to them. Table 8 shows the frequencies and percentages for each source.

Table 8: Sources of help to prevent cancer

Source	**Yes**		**No**	
	Frequency	**Percent**	**Frequency**	**Percent**
GP	94	58%	68	42%
Nurse at the health centre	71	44%	91	56%
Leaflets	139	86%	23	14%
Cancer charities	96	59%	66	41%
TV adverts	118	73%	44	27%
Soap operas	80	49%	82	51%

There is a significant relationship between gender and help from the nurse at the health centre ($p<0.05$). Women are more likely than men to perceive the nurse at the health centres as a source of help to prevent cancer. There is also a significant relationship between gender and help from soap operas ($p<0.01$). Perhaps unsurprisingly, women are more likely than men to

perceive soap operas as being able to help prevent cancer. There were no significant differences between the lower and upper age bands in relation to help from these sources.

Respondents were given space within this section to comment on these forms of help and support to prevent cancer.

GP: The main way in which the GP was perceived to help to prevent cancer was in terms of advice *"by speaking to you openly about prevention measures"* (R33) or *"personal advice"* (R58). Additionally, the GP was considered to be useful in referring people on to specialist services if necessary or for screening "*GP will check out your symptoms and follow through referring you for any tests required*" (R6). Respondents viewed the GP as the 'gatekeeper' or 'first point of contact' to gaining access to services. Other comments focused on the difference between the reasons why you would be attending your GP and prevention of cancer.

"GP is really only helpful if you attend the surgery regularly and most people only go to their GP when they are unwell, not for prevention advice" (R24).

"I only ever see my GP if there is a health issue. While I am sure that they would test for cancer if there was a particular problem, I have never had any discussion regarding cancer prevention" (R59).

***Nurse at the health centre*:** The main response to how the nurse provides help to prevent cancer focused on cervical screening, *"…smear test and she can send the test away and reassure you"* (R11). This may explain the significant association between women being more likely than men to perceive the nurse at the health centre to help prevent cancer. Additionally, the nurse at the health centre was considered to be able to provide help with self-examination *"We have a nurse who can do a breast examination. She is trained and knows what to be concerned about"* (R16). All responses in relation to self-examination were made by women. No male respondents referred to the nurse being able to help with self-examination. The nurse was considered by some respondents to provide prevention advice; *"She can give you educational talks on lifestyle… how you could start to change things"* (R50). Respondents also felt that the nurse was approachable; *"when getting a smear test, she is approachable about answering questions"* (R143) and pro-active about cancer prevention *"unlike doctors, they actually seek me out to arrange these things"* (R119). However, there were also some negative comments made regarding the nurse. "*I have never met her – does she exist?"* (R26). *"I really don't know what she does"* (R142).

Leaflets: It is evident from the responses to the question on leaflets that the highest percentage of respondents (86%) felt that leaflets provided help to prevent cancer. This reflects stage 2 findings and is in keeping with the importance placed on information by this age group. Respondents identified leaflets as reminders "*Reminds me of proper diet, to reduce alcohol and about the appropriate lifestyle… serves as a reminder for me"* (R1); accessible *"very accessible when you want to see possible signs and symptoms"* (R3); source of further contact information *"they give me details of who to contact for more information"* (R38) and informative *"provides the information that you need and you can keep it"* (R145).

However, many comments were made relating to the lack of availability of leaflets.
"The leaflets are just not available… maybe in GP surgeries or health centres but what if you don't go there. Why are they not in supermarkets, shopping centres, swimming pools, churches?" (R151).
"They would provide help in the form of accurate information but how do I get them?" (R36).
"Please leave them in popular places not just medical places" (R111).

Cancer Charities: It was perceived by respondents that the help provided by cancer charities focuses on information and screening; "(Provide help) *by publicising the relevant information to the public*" (R31); *"Mobile screening is a great idea especially for country areas"* (R15). Furthermore, the issue of trust in communicating the correct information was also commented upon *"they give the correct, bare facts with no frills"* (R52); *"You know when you hear their public press releases, advertisements and spokesperson comments on Government policy that you can believe them"* (R100); *"They have no other agenda but to tell you the truth"* (R151).

The research element of cancer charity work was acknowledged by many respondents as help, not personal help, but help on an ongoing basis; *"their research programmes provide a different kind of help, help for the future"* (R42). The human face and supportive nature of cancer charities was referred to by many respondents: *"You know that you can talk to them about it"* (R17); *"They let people know that they are not on their own"* (R10); *"Always willing to listen"* (R74).

Television Advertisements: It is evident that television advertisements are part of the informational aspect that this particular age group appears to value. Respondents felt that the adverts were *"visual aids"* (R4), *"educational"* (R21), *"instrumental in raising people's awareness"* (R15), capable of reaching a wide audience *"access to people in all types of situations, age groups, culture…"* (R6) and *"attracts your attention immediately and shows you the consequences"* (R132).

Many comments focused on what respondents would like to see in the adverts, with the 'hard-hitting' approach being favoured; *"They bring the reality into your living room and the more hard hitting the better"* (R80); *"Give us shock tactics"* (R103).
"Most people watch TV and it reaches huge numbers. I would like to see more advertising of a hard hitting kind like the one presently on drunk driving and speeding which is making a bit impact on young people" (R87).

Soap Operas: Almost fifty percent of respondents felt that soap operas helped them to prevent cancer. Most of these respondents were women and it is unsurprising that there is a significant relationship between gender and soap operas. After all, women make up the majority of the audience that watch and become involved emotionally with soap operas. Comments focused on the emotional attachment that people build up with characters in soap operas:
"You relate to the characters and tend to take in what is happening to them" (R30).
"You can see how someone with a particular cancer can cope, how they discovered that they had the illness in the first place and how they go about telling their family members that they are ill. Seeing those things happening, you would put yourself in their place and maybe cope a bit better yourself" (R16).

Respondents felt that the main way that a soap opera could provide help to prevent cancer was by raising awareness and stimulation discussion of topics that are not usually addressed in everyday conversation. Other respondents referred to the helpline information that is often displayed on the screen after a soap opera has dealt with a storyline involving cancer.

Types of help needed to prevent cancer
Respondents were asked to outline what types of help they felt they needed to help prevent cancer. Responses were organised into themes and are ranked ordered by number of respondents citing each theme.

1. Accurate and understandable information;
2. An annual check up;
3. Practical help with diet;
4. Genetic testing;
5. Help with lifestyle;
6. Help at work;
7. Help to stop smoking;
8. Provision of personalised information;

9. Better facilitated access to gym or sports facilities;
10. Drop in clinics for cancer prevention.

Attitudes and Beliefs about Cancer Prevention

Respondents were asked to indicate their level of agreement with 17 statements made up of the most salient attitudes and beliefs of focus group respondents during the exploratory phase of the study. Table 9 illustrates the level of agreement for each statement.

Respondents with a lower level of knowledge of cancer warning signs were more likely to hold the following attitudes:

- It is too late for me to change my behaviour now;
- Children should be targeted with cancer prevention information rather than my age group;
- Cancer prevention information is too negative;
- I believe that the chances of survival from cancer are poor;
- There is too much cancer prevention information;
- I don't trust the information given to me about cancer prevention.

Respondents with a higher level of knowledge of cancer warning signs were more likely to hold the following attitudes:

- I am interested in cancer prevention;
- I take notice of the cancer prevention information targeted at me;
- I have changed my behaviour as a result of cancer prevention information;
- I make decisions about my lifestyle based on cancer prevention information.

Gender:

Men are more likely to:

- believe that their risk of getting cancer is high;
- think that you can get cancer no matter what preventive measure you take;
- feel that it is too late for them to change their behaviour at this age (35-54);
- perceive that there is too much cancer prevention information;
- distrust the cancer prevention information given to them.

Table 9: Attitudinal statements

Statement	Agree (%)	Disagree (%)	Don't know (%)
My risk of getting cancer is low	21.6%	41.8%	36.6%%
You can get cancer no matter what preventative measures you take	66%	19.4%	14.6%
I believe I can take measures to prevent cancer	72.8%	11.9%	15.1%
It is too late for me to change my behaviour now	11.2%	81.6%	7.1%
I believe that children should be the group who are targeted with cancer prevention information	70.2%	16.3%	13.5%
I feel that cancer prevention habits need to be formed early in life	88.5%	6.8%	4.7%
Cancer prevention information is too negative	24.2%	51.7%	24.2%
I believe that chances of survival from cancer are poor	30.9%	46.8%	22.3%
There is too much cancer prevention information	3.5%	89.5%	3.5%
I just want to know the facts about cancer prevention	69.6%	13.3%	17.1%
The warning signs of cancer are not made clear enough	63.3%	24.4%	12.4%
I don't trust the information given to me about cancer	8.9%	74.8%	16.3%
I take notice of the cancer prevention information targeted at me	76%	8.3%	15.7%
I have changed my behaviour as a result of cancer prevention information	57.4%	20.6%	22%
I am interested in cancer prevention information	88.6%	2.5%	8.9%
I make decisions about my lifestyle based on cancer prevention information	52%	23.5%	24.5%
I intend to make changes to my lifestyle to prevent cancer	70.3%	10.2%	19.5%

Women are more likely to:

- feel that cancer prevention information is too negative;
- take notice of the cancer prevention information targeted at them;
- perceive that they have changed their behaviour as a result of cancer prevention information;
- be interested in cancer prevention;

- make decisions about their lifestyles based on cancer prevention information.

Socio-Economic Status

Respondents with a lower SES were more likely to hold the following attitudes or beliefs:

- you can get cancer no matter what preventative measures you take;
- it is too late for me to change my behaviour now;
- I believe that children should be targeted with cancer prevention information – people with a lower SES are more likely to agree that children should be targeted with cancer prevention information instead of their age group (35-54);
- cancer prevention information is too negative;
- I believe that the chances of survival from cancer are poor;
- there is too much cancer prevention information;
- I don't trust the information given to me about cancer.

Respondents with a higher SES were more likely to hold the following attitudes:

- the warning signs of cancer are not made clear enough;
- I take notice of the cancer prevention information targeted at me;
- I have changed my behaviour as a result of cancer prevention information;
- I make decisions about my lifestyle based on cancer prevention information.

Level of Educational Attainment:

Respondents with a low level of education are more likely to hold the following attitudes:

- you can get cancer no matter what preventative measures you take;
- it is too late for me to change my behaviour now;
- I believe that children should be targeted with cancer prevention information - people with a lower level of educational attainment are more likely to believe that children should be targeted with cancer prevention information than their age group (35-54);
- cancer prevention information is too negative;
- I just want to know the facts about cancer prevention;
- the warning signs of cancer are not made clear enough;
- I don't trust the information given to me about cancer prevention.

Respondents with a higher level of educational attainment are more likely to hold the following attitudes:

- my risk of getting cancer is low;
- I believe I can take measures to prevent cancer;
- I am interested in cancer prevention;

- I make decisions about my lifestyle based on cancer prevention information.

Skin Cancer Behaviours

Results from the regression procedures show that subjective norm and perceived behavioural control are independent predictors of intention to use sunscreen. However, neither a favourable or unfavourable attitude with regard to the sun predicts sunscreen use with this age group. Subjective norm as a predictor of using sunscreen means that those people who feel under social pressure or feel that other people expect them to use sunscreen are more likely to carry out this behaviour. Perceived behavioural control as a predictor of using sunscreen means that people who feel it is easy and within their control to use sunscreen have a higher intention of doing so.

Beliefs about the sun, its dangers and using sunscreen illustrate that respondents who show low intention to use sunscreen believe that they look healthier with a suntan, that you need to use sunscreen abroad but not at home, and that sunscreen is needed for children but not for adults. Low intenders also admit that they use sunscreen to please other people and feel that it is important to them to do the same as other people. They are also more likely to believe that the incidence of skin cancer in Northern Ireland is very low, that using sunscreen is too much hassle, and admit that they could not be bothered using it. Figure 3 outlines the profile of a low intender to use sunscreen.

Figure 3: Profile of a low intender to use sunscreen

- Overall, 488 respondents were scored as low intenders (46% of the sample).
- Low intenders are more likely to be in the younger age band (35-44).
- Level of education is not a significant predictor of intention to use sunscreen. Low intenders to use sunscreen are spread across the different levels of educational attainment from primary school to higher degree.
- Yearly income is a significant predictor of low intention. Lower yearly income would indicate lower intention to use sunscreen.
- Respondents who are married or cohabiting in this population are more likely to be low intenders than single respondents.
- Knowledge of cancer warning signs is a significant predictor of intention to use sunscreen.
- The average number of warning signs correctly identified among low intenders was 4.59. For high intenders, the average number of warning signs correctly identified was 4.9.
- Over 91% of low intenders accurately identified ‘a change in a wart or mole’. 97% of high intenders identified this warning sign correctly.
- Type of accommodation and living in an urban or rural area are not predictors of intention to use sunscreen within this population;
- 15% of low intenders stated that they would agree with cancer prevention information that they saw but would do nothing about it;
- 30% of low intenders felt that there was no support available to help prevent cancer and 25% felt that they did not know of any form of available support.

Colorectal Cancer Behaviours

Results from the linear regression procedures show that attitude, subjective norm and perceived behavioural control are independent predictors of intention to eat five portions of fruit and vegetables a day. A favourable attitude with regard to eating fruit and vegetables is a predictor of whether people will eat five portions a day. People who feel expected by those close to them (family) to eat five portions of fruit and vegetables a day are more likely to intend to do this. This is demonstrated most strongly among men who feel that a spouse/partner expects them to eat five portions of fruit and vegetables each day. People who feel that eating five portions is easy and within their control are more also more likely to eat five portions of fruit and vegetables each day.

Figure 4: Profile of a low intender to eat five portions of fruit & vegetables a day

- Overall, 519 respondents were scored as low intenders (49% of the sample);
- Low intenders are more likely to be in the younger age band (35-44).
- Men are more likely to be low intenders.
- Low intenders are more likely to have a lower level of education than high intenders.
- Yearly income is not a significant predictor of low intention to eat five portions of fruit and vegetables a day.
- Socio-economic status is a significant predictor of low intention. Low intenders are more likely to have a lower socio-economic status.
- Marital status and living in a rural or urban environment are not significant predictors of low intention to eat five portions of fruit and vegetables a day;
- Low intenders are more likely to be living in rented accommodation.
- Knowledge of cancer warning signs was not a significant predictor of intention to eat five portions of fruit and vegetables a day.
- High intenders identified, on average, 4.8 cancer warning signs correctly whereas low intenders correctly identified on average 4.7.
- 84% of low intenders identified the warning sign 'unusual bleeding or discharge' correctly compared to 88% of high intenders;
- 88% of low intenders identified the warning sign 'change in bowel or bladder habits' correctly, compared to 93% of high intenders. This would suggest there is a lower awareness of the cancer warning signs identified with low intention but this is not statistically significant.
- 20% of low intenders stated that they would agree with cancer prevention information but would do nothing about it. 1% stated that they would ignore it completely.
- 31% of low intenders felt that there was no support available to help them prevent cancer.
- A further 26% stated that they did not know of any form of support available.

Beliefs about colorectal cancer, prevention and eating fruit and vegetables show that respondents who demonstrate low intention to eat five portions of fruit and vegetables a day do not believe that this can prevent colorectal cancer. They also admit to not knowing how much fibre they should be eating daily. Low intenders are not likely to eat fruit and vegetables to please other people or feel that it is important to them what other people think about that. They do not believe that people around them would disapprove of them not eating fruit and

vegetables. Low intenders also believe that fruit and vegetables take too long to prepare, they feel that they do not have enough time to eat five portions every day and that it is too expensive to buy that amount of fruit and vegetables. Figure 4 illustrates the profile of a low intender in this age group.

Lung Cancer Behaviours

Results from the linear regression procedures show that attitude, subjective norm and perceived behavioural control (self-efficacy) are independent predictors of intention stopping smoking. The measure of perceived behavioural control (controllability) is not a predictor of intention to stop smoking within this age group. An unfavourable attitude to smoking and its effects is a predictor of intention to stop. People who feel under pressure socially and where those close to them (family and friends) expect them to stop smoking are more likely to intend to do so. Perceived behavioural control measured as self-efficacy shows that people who believe that they can stop smoking have a higher intention to try to stop smoking. Perceived behavioural control measured as controllability is not a predictor of intention to stop smoking. People who believe that they have no control over stopping smoking and that it is too difficult for them to give up smoking have low intention of stopping.

Figure 5: Profile of a low intender to stop smoking:

- Out of this sub-sample of 227 respondents, 113 were scored as low intenders (50% of the sample).
- Age and gender are not significant predictors of intention to stop smoking in this sample.
- Low intenders to stop smoking are more likely to have a lower level of education.
- Low intenders are likely to have a lower level of yearly income.
- Socio-economic status is not a significant predictor of intention to stop smoking in this sample.
- Low intenders are more likely to live in rented accommodation than own their own home.
- Knowledge of cancer warning signs was not a significant predictor of intention to stop smoking.
- The average number of warning signs correct for low intenders is 4.68 compared to 4.72 for high intenders.
- 41% of low intenders identified the warning sign ‘a nagging cough or hoarseness’ correctly compared to 42% of high intenders. Overall, this warning sign which is associated with lung cancer was not well recognised;
- 20% of low intenders stated that they agreed with cancer prevention information but would do nothing about it and 3% stated that they would ignore it;
- 34% of low intenders felt that there was no support available to help them prevent cancer.
- A further 19% stated that they did not know of any form of available support.

Low intenders are more likely to disagree that if they continue to smoke they will get lung cancer. They are also more likely to feel that they do not want to stop smoking and agreed

that ‘smoking is an addiction’. In terms of intention to stop smoking, this attitude was not a significant predicator of a high or low intender. Low intenders are less likely to stop smoking even if their partner or family wanted them to. They are also less likely to believe that people close to them disapprove of them smoking. Low intenders are less likely to agree that smoking is now considered anti-social. Low intenders are less likely to have tried to stop smoking in the past and are more likely to believe that it is too difficult to stop. Figure 5 shows the profile of a low intender to stop smoking within this age group

Evaluation of Leaflets

Colorectal Cancer Leaflet

One hundred leaflets on colorectal cancer with one hundred questionnaires were mailed to a random selection of the volunteer survey sample. Sixty-eight respondents returned the questionnaire (68%). Forty-one percent (n=28) were male and 59% (n=40) were female, which reflects the sample breakdown overall. Forty percent (n=27) of the respondents were aged between 35 and 44 years and 60% (n=41) between 45 and 54 years. Seventy-one percent (n=48) were non-smokers and 29% (n=20) were current smokers.

The third section of the questionnaire posed both open ended and closed questions about the leaflet. Respondents were asked for their thoughts in general on the colorectal cancer leaflet. The majority of comments were very positive *“excellent information provided in a concise and simple way”* (R136); *‘very helpful and easy to read”* (R107); *“good information, straight to the point, clear print, easy to read, not too long”* (R120).

Would it catch your attention?

Respondents were asked if the leaflet would catch their attention if they saw it in a shop or health centre. Over 72% (n=49) stated that it would and 28% (n=19) felt it would not. Respondents were asked to detail what they felt it was about the leaflet that would catch their attention. The most prevalent response was the words *“cancer”* (R122) and *“prevention and early detection”* (R120) appearing on the leaflet in large letters. Other responses included:

- Front cover;
  “Normal couple in attractive picture... Discreet but eye catching front cover” (R103).
  “The ordinary photo on the front… There is still embarrassment about this subject, especially bowel cancer among both men and women” (R5).

- Already having bowel problems;
  “I have bowel problems anyway so I am always looking out for information” (R83).

- Being interested in health in general;
  “I am interested in my health and would lift all sorts of leaflets” (R41).

"I would be interested anyway" (R11).

- Family member diagnosed with or died from colorectal cancer;
  "My mother died of bowel cancer so I am interested in information" (R137).
  "I am very aware of cancer in my family" (R12).
  "My grandmother had bowel cancer" (R15).

Understanding the information

Respondents were asked if they understood the information in the leaflet. All (100%, n=68) stated that they did.

Changes to leaflet

Respondents were asked if there was anything that they would change about the leaflet. Overall, 59% (n=40) stated that there were and these were mostly focused on the front cover and more specifically on the photograph. Comments included:

"Cover should be more striking. Looks like life insurance for older people" (R36).

"Photo on the front, looks like retired 60 year olds – needs to be aimed at a lower age group i.e. 50s who may need the info" (R40).

I would make it brighter and feature perhaps a family or younger people on the front, make it more humorous. It's more aimed at elderly people in the present format" (R3).

"Picture on front is 'heterosexual middle class' – won't appeal to everyone" (R32).

"Picture on front cover is not representative of target group; they look less than 40 never mind 50" (R10).

It is interesting that a large proportion of respondents felt that the front cover should be changed while other respondents commented that it was the front cover that enticed them to lift the leaflet in the first place. Some respondents felt that the couple on the cover were too old whereas other respondents felt that they were too young. This shows that people are looking for different things and have different preferences and what may work for one person may not work for another. This reflects other findings from this study in relation to having to tailor information for different groups such as working class men or young mothers.

Other changes to the leaflet suggested by respondents included:

- Telling you what to do;
  "Too many leaflets like this tell you 'don't do this' and 'you must do that'. Give us facts on how to spot cancer and more about not being embarrassed going to doctor not what to do and not do" (R6)

- Not hard hitting enough;

"I would make it more hard hitting so that it made people think about their lifestyle more. Something like 'Cancer – so you know the facts?'" (R33)

- More dietary information;

"Need more detailed information on diet to be included" (R107)
"More information on diet... What constitutes five portions a day? What cereals – surely not rubbish like Coco Pops?" (R150)

- Telling doctor;

"Don't like the line 'your doctor has heard it all before' – this wouldn't make me any keener to tell her. Perhaps 'being honest helps both you and your doctor' would be better" (R63)

- Speech bubbles;

"Don't like the speech bubbles – too cartoony" (R147)

- Photograph on inside of leaflet;

"The picture of the girl in the pool inside the leaflet…she is too young, she should be in her 50s" (R53)

Target Group

Respondents were asked who they thought the leaflet was targeted at. Responses varied with respondents believing the target groups could be aged between 30 and 60 years. Examples of responses included:

"Older age group… Younger people aged under 60 would not think to lift this leaflet. The photo leaves no impression" (R120).

"Middle aged – over 50! Whereas I think it is important to stress prevention – should really be aimed at younger 40ish age group" (R3).

"Aged 50 years and over. But even then, I'm 54 and it does little for me – not graphic enough" (R130).

"30 plus age group…" (R32).

Most respondents thought that it was aimed at both men and women but several felt it was only targeted at men. Others believed that it was targeted at *"everyone, to prevent cancer and to warn of symptoms and to lead a healthy lifestyle at any age"* (R34).

Questions

Respondents were asked if the leaflet answered all their questions about colorectal cancer. Eighty-one percent (n=55) stated that it did and 19% (n=13) felt that it left some questions unanswered. Seven respondents included their unanswered questions in their responses and these are outlined below:

"Can you have any idea from size, shape, colour of bowel movements? Can you go for a test? What does this involve? Put people's minds at rest – do you be asleep? Is it painful?" (R130)

"Mummy had a sound like 'water being poured into a bottle' extra gurgly tummy noises – we were told that this was a symptom – should this be included? Bowel cancer is often a silent cancer – any cause for concern should be reported" (R63)

"What type of diet should I eat to prevent it? More information and detail on this… Not enough detail for me to be sure what to eat" (R107)

"Can I contact the cancer helpline if I am seeking further information or advice? This is not clear. Who can I contact and is it normal working hours? How much exercise is regular – 3 times a week for 30 minutes?" (R59)

"What screening is there for bowel cancer? Where is it available?" (R30)

"Not everyone will think cancer with bloody bowel movements, they will think haemorrhoids – explain the difference" (R6)

"Is six weeks too long to wait before going to the doctor?" (R15)

It is interesting to note that several of these suggested missing questions related to testing. Screening, testing and regular check ups appear to be very important to this particular age group.

Amount of Information

Respondents were asked to indicate their views on the amount of information included in the leaflet. Table 1 outlines the responses. It is clear from the table that the majority of respondents (77%, n=52) felt that the right amount of information was included.

Table 10: Amount of information included in colorectal cancer leaflet

	Frequency	Percent
Too much information to take in	4	6%
Just the right amount of information	52	77%
Not enough information	10	15%
Don't know	2	3%

Does the charity or organisation make a difference?

Respondents were asked whether it made a difference to them which charity or organisation the leaflet came from. Ninety three percent (n=63) stated that it made no difference. Five (7%) felt that it did make a difference for the following reasons:

"Yes I would like it is produced by a local charity who would know how cancer affects the Northern Ireland population" *(R33)*

"Yes, because we would expect a local charity to have the latest information on cancer prevention and care" (R54)

"Reputation within Northern Ireland – if UK then more distant. If associated/involved with undertaking research…" (R59)

"Like to support local services but wouldn't stop me from using/taking those from national providers" (R107)

"You want the organisation that is going to give you information that is correct and know what they are talking about" (R120)

Further Comments

In keeping with normal protocols, respondents were given a chance at the end of the questionnaire to make any further comments on the leaflet. Some wanted to tell their story about a family member or friend who had cancer and others wanted to tell of things that they had heard about cancer. As these are not relevant to the leaflet or this study, they have not been included in this analysis. However, it does highlight the fact that people in this age group have a lot to say about cancer and how it has affected them and their families and people that they know. This is further justification for the exploration of mid-life attitudes, knowledge and behaviours with regard to cancer.

In relation to the availability and ease of access many respondents made comments, which are concerning:

"I have been looking for information like this for some time in book shops and at health shops" (R5)

"Why have I never seen this leaflet before? It should be left in all waiting rooms. Hairdressers, dentists, outpatients, doctor's surgeries, recreation halls, sports venues, schools, youth clubs, churches... Why is it not?" (R50)

"I have heard by word of mouth about bowel cancer but this is the first leaflet that I have ever seen" (R8)

Other comments relevant to the leaflet were as follows:

- Should be more hard-hitting;

"The leaflet is too kind with its lack of information. It has to be more hard hitting to make people like me realise that this is a life threatening illness. So try to test as many people as possible in as many cancer tests as possible" (R130)

- European Code Against Cancer;

"If the leaflet is targeting bowel cancer, then is the extra panel on cancer in general detracting from the central message (European Code Against Cancer)? Seems odd to jump to skin/sun etc" (R32)

- Teaching;

"I will use this information in my teaching class (biology teacher) to stress importance of fibre in diet etc" *(R4)*

- *Going to see doctor;*

"I have made an appointment to see my doctor as I have some worries. This leaflet gave me excellent information and I hope my symptoms are caused by other conditions" (R5)

Skin Cancer Leaflet

One hundred leaflets on skin cancer, each with a related questionnaire was mailed to a random selection of the sample. Sixty-six respondents returned the questionnaire (66%). Thirty-eight percent (n=25) were male and 62% (n=41) were female, which generally reflects the sample breakdown overall. Forty-eight percent (n=32) were aged between 35 and 44 years and 52% (n=34) between 45 and 54 years. Ninety-two percent (n=61) were non-smokers and 8% (n=5) were current smokers.

The third section of the questionnaire posed both open ended and closed questions about the leaflet. Respondents were asked for their thoughts in general on the skin cancer leaflet. General thoughts about the leaflet were very positive with the catchy localised tag line 'Ulster Fries' getting a lot of praise*: "Ulster Fries! Excellent and funny!" (R88). "Great eye catching title!" (R42). "Excellent title – great for drawing attention to the leaflet…" (R147).* Other general comments included:

"The leaflet is very colourful, the title is catchy. It is well laid out with bullet points. The European Code Against Cancer at the back is very informative" (R42)

"Gives a lot of information in quite a small space. Colourful, modern appearance…" (R21)

"I like the format – bullet points are much better than long wordy paragraphs" (R22)

Would it catch your attention?

Respondents were asked if the leaflet would catch their attention if they saw it in a shop or health centre. Eight-eight percent (n=58) of respondents stated that it would whereas 12% (n=8) felt that it would not. The title of the leaflet 'Ulster Fries' was referred to by the majority of respondents as eye catching as well as the *"bright and colourful"* (R138) nature of the leaflet. Other replies included:

- Common cancer;

"Because skin cancer is getting very common, six out of ten people suffer from it!" (R141)

- *Spending time outdoors;*

"I spend a lot of time outdoors so it seems very relevant" (R131)

- *Holidays;*

"Because it is coming up to holiday time and I would want to know what precautions I should be taking" (R115)

"I have two small children and we are going on holiday to a hot country so any help to look after their skin and my own I would want to know"(R16)

- *Not much skin cancer in Northern Ireland;*

"Over here, you don't think that there would be much skin cancer with not a lot of sun about. This leaflet would draw your attention because of that" (R81)

- *Prevention;*

"I think people have a radar when it comes to cancer, as long as the words 'cancer' and 'prevention' are used, it will get attention" (R24)

"Because it's giving information on prevention, that's why it would catch my eye" (R17)

Interestingly, the comments made about going on holiday being the focus for reading the leaflet were made by female respondents. There would still appear to be some barriers to people recognising the importance of sun protection at home as well as when on holiday in another country.

Understanding the information

All respondents (100%, n=66) indicated that they understood the information in the leaflet.

Changes to leaflet

Respondents were asked if there was anything that they would change about the skin cancer leaflet. Seventy-one percent (n=47) of respondents said that they would not change anything and 29% (n=19) stated that they would. The changes suggested fall into the following themes:

- Colour of the leaflet;

"The white and yellow type is hard on the eyes against the orange background" (R129)

"The orange colour is too overpowering…" (R85)

"Colour scheme of writing is too difficult to read" (R29)

- Faces;

"Image on the front is of older man – perhaps a range of faces would appeal to a broader group" (R21)

"I would suggest a very lined and wrinkled female face be used on the cover as women are much vainer than men so they would probably be more concerned about the ageing process than getting skin cancer. For me anyway, I would read it because I'd want to avoid getting wrinkly (if it had a female face)" (R91)

"Perhaps have both a younger and an older face on the front then one or the other don't think that the leaflet isn't for them" (R76)

"Don't like 'blue' face…" (R134)

- More shocking;

"It could be more shocking. Show pictures of affected people" (R74)

"Not hard hitting enough…" (R157)

Target Group

Respondents were asked who they thought that the leaflet was targeted at. Responses mainly focused on the leaflet being targeted at *"every member of the public"* (R141). The other main responses were *"parents"* (R134) and *"sun worshippers"* (R133).

Questions

Respondents were asked if the leaflet answered all their questions about skin cancer. Ninety seven percent (n=64) of respondents indicated it did. Two respondents (3%) had the following unanswered questions:

"What other types of skin cancer are there? Only one type is mentioned. Are symptoms different for the other types?" (R159)

"Need broader background and more specifics on different types of skin cancer" (R140)

Amount of Information

Respondents were asked to indicate their views on the amount of information included in the leaflet. Table 1 outlines the responses. It is evident that the majority of respondents (85%, n=56) felt that the right amount of information was included.

Table 11: Amount of information included in skin cancer leaflet

	Frequency	Percent
Too much information to take in	6	9%
Just the right amount of information	56	85%
Not enough information	3	5%
Don't know	1	1.5%

Does the charity or organisation make a difference?

Respondents were asked if it made a difference to them which charity or organisation the leaflet came from. Seventy-nine percent (n=52) felt that it did not make any difference and 21% (n=14) stated that it did. These respondents gave the following reasons as to why it makes a difference:

"I want to see information from a recognised charity and/or government sponsored to give credibility" (R21).

"If they are well known and have credibility then you would be inclined to take them seriously" (R39).

"If it is a leaflet from the Ulster Cancer Foundation, I think you take more notice of it and trust the information more" (R81).

"For me the leaflet should be from a local charity" (R117).

"Credibility of information, we need to be sure that the information is up to date and accessible" (R129).

Further Comments

As with the colorectal cancer leaflet, respondents were asked for any further comments that they wanted to make on the leaflet. Again, some took the opportunity to 'tell their stories'. However, these 'stories' are not presented here as the focus is on comments relating to the leaflet:

- Too late;

"Possibly the information is coming 'too late'. Perhaps include it in primary school education (like road safety). But my thinking is that people have the information but ignore it" (R88)

- Conflicting information;

"A recent article in the Sunday Times suggested that sunlight was very good for us because of vitamin D and that avoiding it should not be recommended. This was an excellent article but would make people think that sunshine is actually good for them due to vitamin D synthesis" (R75)

- Holidays;

"As someone who has just come back from Tenerife on holiday I can really see the need for many more people to get this message" (R47)

- Cancer causing substances (in relation to European Code Against Cancer on back page of leaflet);

"I'd like more information on what known cancer causing substances are" (R145)

"European Code Against Cancer requires more explanation attached, for example, how do we know what cancer causing substances are?" (R115)

DISCUSSION

Level of Knowledge

There is clear evidence from this study that there is a low level of knowledge of cancer warning signs among people in mid-life. This reflects the findings of Wardle *et al.*'s (2001) study which was the first in this area to be undertaken in Europe. Wardle's study was undertaken with a population aged 18 years and above and findings showed that there is a higher level of knowledge among people in mid-life. The level of knowledge of people in mid-life in this present study is consistent with Wardle *et al.*'s (2001) findings. Therefore, while it is accepted that people in mid-life may have a higher level of knowledge than those in other age bands, it is clear that even this is low. This is a major cause of concern in relation to cancer prevention and the recognition of warning signs.

These findings are reflective of many published international and national research studies in this field (Bostick *et al.*, 1993; Katz *et al.*, 1995; Hancock *et al.*, 1996; Nichols *et al.*, 1996; Breslow *et al.*, 1997; Fitch *et al.*, 1997; Paul *et al.*, 2003). Conversely, Rebello Palancia *et al.* (1996) Spanish study uncovered findings that contrast with those of other studies. They found that members of the public had a high level of knowledge of cancer warning signs. While the authors do not offer any explanation for the positive and atypical findings, one possible explanation may be that the study sample was recruited from people attending a health centre. This may suggest that such a sample would be more interested and proactive about their health than people who do not attend their health centre. An alternative explanation could be a recent cancer prevention campaign in the area, but this is not specified.

Evidence from the present study shows that the level of knowledge is poor within specific population sub-groups such as, those with a lower level of educational attainment, a lower socio-economic status, men and those who are single. This evidence supports findings from previous studies in which demographics have had an effect on knowledge of cancer and cancer warning signs. This includes level of education (Wardle *et al.*, 2001; Cetingoz et a., 2002; Wetter *et al.*, 2005; Huisman *et al.*, 2005) and gender (Wardle *et al.*, 2001; Kiekbusch *et al.*, 2000; Katz *et al.*, 1995). Findings from the present study also show that age also affects knowledge; the lower age group within the band in this study displayed a lower level of knowledge than the higher band.

In relation to socio-economic status (SES), analysis showed that housewives and househusbands knowledge is higher than their counterparts in the unskilled SES category. While this is speculation, reasons for this could include giving up employment to look after a child in the short-term, career breaks, caring for a partner/relative or no continued need to work. Further evidence shows that a higher level of knowledge is also associated with owning your own home, which is in keeping with the findings regarding the effect of SES. Findings from existing published studies show similar results in relation to SES having a positive effect on knowledge (Weinreich *et al.*, 1992; Price & Everett, 1994; Brunswick *et al.*, 2001).

Findings demonstrate that there are differences in the identification of warning signs of cancer between genders, age bands, level of educational attainment and SES. The most identified warning sign was 'a change in a wart or mole', followed closely by 'thickening or lump on body', 'unexplained weight loss' and 'a change in bowel or bladder habits'. A 'thickening or lump on the body' has been well recognised by the public for some years now and has been attributed to high profile and ongoing media campaigns for testicular and breast cancer (Bostick *et al.*, 1993; Nichols *et al.*, 1996; Paul *et al.*, 2003).

Poorly recognised signs included 'indigestion or difficulty swallowing', 'a nagging cough or hoarseness' and 'a sore that does not heal'. Misconceptions about cancer warning signs emerged as 'tiredness', 'poor appetite' and 'bleeding gums'. These findings reflect those of Wardle *et al.*'s (2001) who also showed that 'indigestion or difficulty swallowing was poorly recognised. The level of recognition of these signs does not appear to have increased in the five intervening years. Further exploration of the reasons for this should be considered.

A low level of knowledge was displayed in the lack of awareness and misguided beliefs held in relation to cancer prevention behaviours. Men especially were more likely to identify no cancer prevention behaviours or behaviours that were questionable. The lower level of knowledge and awareness in men is cause for concern.

The focus group findings also showed that men felt that the amount of information provided was overwhelming and that this caused them to ignore it. Male respondents wanted information to be clear and concise and would prefer to be told what the warning signs are so that they would know what to look out for. Previous research (Meissner *et al.*, 1992) found that men cited family and friends as a source of information twice as often as women, who were more likely to go to their doctor or use printed media. This would point to simple, clear

information conveyed from a trusted source rather than media or doctor. Survey findings from the present study confirmed this, as male respondents stated that there was too much information and that much of it was conflicting and confusing. Existing literature also emphasises the unnecessary complexity of the information provided to the public (Williams, 1995; Thornton *et al.*, 2003; Mancini *et al.*, 2005).

The present study provides additional evidence that men have a lack of confidence and trust in much of the information provided. This is also evident in the low level of knowledge and negative attitudes held by men, especially single men. Men who are single have the lowest level of knowledge and awareness of cancer warning signs in this population. These findings suggest that information and education needs to be targeted at single men. This supports findings from Brunswick *et al.* (2001) who suggested that single men should be a priority area for cancer prevention education. The findings of the present study show that generally the knowledge of single, unmarried men has not improved in the interim.

Choice

Focus group findings showed that individuals felt that it was their choice as to whether or not to undertake cancer prevention behaviours. There was an attitude of not being able to force people to do things that they simply did not want to do. Also the attitude of 'don't tell me what to do' was displayed frequently.

There is evidence from the focus groups and the volunteer sample that people are overwhelmed by the amount of health information targeted at them and they are tired of being told what they should not do. There is additional evidence that people are finding it increasingly difficult to find time for themselves within their busy lifestyles. Healthy behaviour appears to be something that people are willing or forced to sacrifice to fit in with other things such as work, family or household chores. Perhaps targeting the attitude of 'don't tell me what to do' with a more proactive, empowered approach may encourage people to switch on rather than switch off. However, with the increasing deficit in work/life balance, this may be a societal problem that needs to be targeted at Governmental level to encourage people to make time for their health.

Attitudes and Beliefs

Evidence from this study shows that attitudes and beliefs about cancer and cancer prevention are associated significantly with level of knowledge about cancer, gender, SES, and level of educational attainment. This information is of vital importance as attitudes and beliefs are often the gateway to changing people's behaviours (Ajzen, 1980; Ajzen, 1998; Fishbein,

1996). Insight into the attitudes and beliefs held by different individuals or sub-groups of people by demographic or economic group can provide the knowledge necessary to effectively target attitudinal change, which in turn can lead (with other factors) to behaviour change. For example, this study provides the profiles of low intenders to carry out specific health behaviours in relation to cancer prevention. This information will provide the knowledge to target more effectively those low intenders through changing the attitudes that they hold about that behaviour.

Perception of risk

A dichotomy was uncovered within this age group in relation to perception of risk. Some respondents felt that their age group was too young to be concerned about cancer and cancer prevention and others felt that it was too late for this age group to prevent cancer, that the damage had already been done. Interestingly, these attitudes were not split into the younger and older age band but were prevalent across both. Existing research has shown that age and risk perception has previously not been well recognised by the public (Fitch *et al.*, 1997; Breslow *et al.*, 1997; Wardle *et al.*, 2001). There is evidence from all phases of the present study that perceptions about risk within this age group are varied and this illustrates that confusion that exists over the level of risk that age presents in relation to cancer.

Fear

There were many respondents who felt that cancer would not happen to them and that they simply did not want to know. There has been much progress over the last twenty years in challenging the taboo surrounding cancer and even the very use of the word cancer. Nonetheless, it is clear that there is still fear with regard to cancer within this age group in both the younger and older age bands. Cancer has been described as the most feared of all diseases in the modern world (Fife & Wright, 2000; Beach *et al.*, 2005; Clarke & Everest, 2006).

Within the present study, some people stated that they are resigned to cancer having an influence on their life in one way or another. Previous studies have also identified this attitude. For example, Vetter *et al.*'s (1991) study found that a large proportion of the sample felt that getting cancer was *"just a matter of luck"* (p.192). Other studies showed that fear about cancer has caused people to believe that cancer is *"untreatable, inevitable and ultimately leads to death"* (Elmubarak *et al.*, 2005, p.507). In this present study, there is evidence to show that people expressing this fear are more likely to have a family history of cancer. Respondents also stated that they would be more likely to change their behaviour if a family member or close friend was diagnosed or died from cancer.

Effective Methods of Provision of Information

Related to the previous discussion on choice, this study has demonstrated the lack of opinion within this population relating to effective methods of providing cancer prevention information. This attitude was not demonstrated by one particular demographic or economic group but was evenly spread across all sub-groups. Similar to the focus groups, some respondents stated that they just were not interested, did not want to know, and do not want to be told what to do. It may be that some people will exert their free will regardless of the consequences and this may be something that health promotion experts may have to accept; some people may just resist help. Previous research concluded that a fatalistic attitude with regard to disease may determine *"whether a health problem is considered preventable or not"* (Smith *et al.*, 1999, p.316).

Within the present study, effective methods of provision of cancer prevention information were considered to be media-related with television advertising being the most popular choice. 'GP/nurse' and 'the health centre' were considered fourth and sixth most effective respectively. In total, 6% of respondents with a high level and 12% with a low level of knowledge did not have any opinion. These findings are reflective of existing evidence showing that printed forms of media, alongside television and radio, have long been considered effective by the public (Wade *et al.*, 1969; Redman, 1986; Henwood *et al.*, 2003; Basch *et al.*, 2004).

As previously discussed in relation to other areas of the study, demographics had a significant effect on respondents' perceptions of effective methods of providing information. Significant relationships are apparent between gender, level of educational attainment, SES, and effective methods of provision. These findings build on those of previous studies in relation to gender (Neame *et al.*, 2005), level of education (Carlsson, 2004) and SES (Boudioni *et al.*, 2001).

Further evidence showed that in comparison to men, women are more likely to identify numerous sources as effective methods. This has also been apparent in other studies (Meissner *et al.*, 1992; Neame *et al.*, 2005). Respondents with a higher level of educational attainment were more likely to advocate cancer prevention information through the. Those with a lower level of education preferred meeting with their GP/nurse and discussing the information verbally. This is highly reflective of findings from Meissner *et al.*'s (1992) study.

Findings also showed that while people in higher SES groups prefer media-related sources (television, magazines, and newspapers); people in lower SES groups prefer leaflets. This

could be due to access to magazines or newspapers with cost being an issue. Alternatively, literacy may be contributory factor where those with a lower level of education may prefer to have someone talk to them about prevention than try to assimilate information from media sources. However, the fact that those with a lower SES prefer leaflets may challenge with assumption. The issue of trust could also play a part in this. There may be a lack of confidence and trust in the media but trust in a person (GP or nurse) giving information and advice verbally. Many studies have shown that people in lower SES groups will not seek information as readily or in as much detail as those from higher SES groups (Boudioni *et al.*, 2001; Neame *et al.*, 2005).

Findings from this study also show that there is a significant positive relationship between gender and help from the nurse at the health centre. Women are more likely to perceive the nurse at the health centre as a source of help to prevent cancer. Women are also more likely to associate the nurse with screening for cancer (i.e. cervical screening). This may explain the significant association between women being more likely than men to perceive the nurse as providing help to prevent cancer. Furthermore, focus group findings showed that men perceive that women are used to attending for medical or health related matters and that cancer prevention behaviour is easier for women because they are used to this.

Sources of Cancer Prevention Information

The findings show that one's level of knowledge has a direct relationship to which sources people get their cancer prevention information from. Those with a low level of knowledge acquire their information primarily from sources such as soap operas or word of mouth. Concern over these sources of information relate to accuracy. Cancer has so many myths surrounding it that truth and fact can sometimes be lost in the 'story'. While television programmes such as soap operas may be fastidious about getting their facts right, the illustration is generally about one character and their experience and this may not be the case for everyone.

Those with a higher level of knowledge are more likely to acquire their information from books or magazines. This raises the question of literacy in relation to the provision and acquisition of health information.

Age, gender, SES, level of educational attainment, marital status and type of accommodation (owner occupied/rented) and rural/urban location all have significant relationships with the acquisition of information. This illustrates that the blanket approach adopted by the media and sources of information such as health promotion leaflets is not reaching its intended target in

its entirety. Tailored information is a necessity to reach all intended groups within this age group. Previous studies concluded that there is a widespread and agreed need for more appropriate and targeted education about cancer (Nichols *et al.*, 1996; Hancock *et al.*, 1996; Mishra *et al.*, 2000; Cetingoz *et al.*, 2002). Researchers concluded that it is vital to provide up-to-date, appropriate and culturally sensitive information on cancer to specific social sub-groups (Shankar & Figueroa, 1999; Mishra *et al.*, 2000; Ratnashinghe *et al.*, 2001; Ma & Fleisher, 2003). The findings of the present study support this assertion and indicate that this information must be provided in a manner and format that is acceptable to the sub-group and that will have the most impact based on people's preferences for information.

Dealing with Cancer Prevention Messages

Findings from this study showed that people with a higher level of knowledge are more likely to agree with provided information and either make lifestyle changes or think about making lifestyle changes. In addition, women are more likely than men to deal with cancer prevention messages in a positive manner. This could be due to the fact that women are more open and proactive about their health in general than men and they are more likely to attend a doctor or health centre (for example for cervical or breast screening). In contrast, men do not attend formal appointments like this on a regular basis and are less likely to attend their GP unless absolutely necessary (BBC, 1999; Jones, 2000; MHF, 2006; Arber *et al.*, 2006).

Findings also show that people in a higher SES group are more likely to deal with cancer prevention messages in a positive manner. It could be argued that this is due to the fact that they are better educated, have more money and a higher level of knowledge. Additionally, it has to be acknowledged that the rates of poor health and illness are significantly higher among those in lower SES groups. This may have an effect on dealing with any health messages in a positive manner. It is useful to place findings like these into a social context. There is a significant body of knowledge showing that people with a lower income, lower SES and lower educational attainment engage in significantly more high-risk health behaviours (Sorensen *et al.*, 1999; Chavez *et al.*, 2003). There is no doubt that the more affluent a person is, the better their health will be (DH, 2003). Socioeconomic inequality in relation to health continues to be a significant public health concern.

Support to Prevent Cancer

Findings show that a quarter of all survey respondents felt that there was no support available to help them to prevent cancer. Overall, 62% of these respondents were in the younger age band of 35 to 44 years of age. Almost 60% of these were women. The majority had a low to moderate level of educational attainment and income. The first source of support for both men

and women was their GP. When probed further, important sources of help and support emerged in several categories, information and advice; practical and personalised help; screening; support in the workplace; improved access to gym or sports facilities and the provision of sunscreen on the NHS.

Role of the GP in the Prevention of Cancer

Focus group findings point to the role of the GP and that it should be more pro-active in cancer prevention (by providing information). The GP was identified on numerous occasions as being helpful in answering questions and providing advice. However, this 'role' in the provision of cancer prevention education and information was not considered by all to be a role that should be taken on by the GP. Reasons for this were that people only go to their GP when there is something wrong with them or when there is a particular issue with their health. People are not likely to make an appointment to ask about cancer prevention.

Methods of Providing Cancer Prevention Information

Within the volunteer sample survey, cancer prevention leaflets were identified as the highest ranked source of cancer prevention information. This reflected the findings of the previous stages and is in keeping with the importance placed on information by this age group. However, the distribution and access to these leaflets was a major issue for this age group. Leaflets on cancer prevention were not considered to be available or visible in the right places. Suggestions included not only having leaflets available in medical settings but in places used by the vast majority of the public – bus stations, train stations, supermarkets, churches, swimming pools – *"popular places – not just medical places"*.

After leaflets, television advertisements were the next most popular source of providing information to prevent cancer. Again, this is part of the informational aspect that this particular age group appears to value. Many comments focused on what respondents would like to see in the adverts, with the 'hard-hitting' approach being favoured. This perception is interesting. The focus group findings provide further evidence for this. Moreover, the inability of the respondents to identify any current cancer prevention campaigns was notable. Those that were identified were noted because of their shock value such as drink driving and dangerous driving campaigns.

Furthermore, while the drink driving and speeding campaign was mentioned on several occasions in respondents' comments, there is no mention of the 'hard-hitting' lung cancer campaign portraying the thirty-seven year old mother dying of lung cancer told in the words of her 10 year old daughter. This advert is targeted directly at this age group and yet was not

been referred to once by any respondent. Furthermore, the rates of lung cancer due to smoking are increasing not decreasing, especially in women. This is despite several hard hitting lung cancer/smoking television advertisements in recent years. The only respondents in the focus groups to identify the shock tactics of smoking advertisements were non-smokers. Furthermore, the existing literature on hard-hitting television campaign and shock tactics shows no evidence that they have any effect (Alderman, 1998; Percival, 2003). Despite this, it was clear from the findings of this study that respondents in this age group, like to see these advertisements on the television. This raises the question as to whether people see the adverts and think that it is shocking but do not relate the behaviour or the consequences to themselves.

Almost fifty percent of respondents felt that soap operas helped them to prevent cancer. Most of these respondents were women and it is unsurprising as the majority of the audience that watch and becoming emotionally involved with soaps are women. Another aspect of cancer storylines in soaps commented upon by many respondents was the stimulation of discussion of a subject that is not an everyday topic of conversation. Other respondents referred to the helpline information that is often displayed on the screen after a soap opera has dealt with a storyline involving cancer.

However, there is limited evidence as to whether significant numbers of people contact these helplines after soap operas for prevention information or help. The BBC press office reports that a helpline advertised after an episode of a soap opera dealing with a sexual abuse storyline received 400 phone calls in the 24 hours after the broadcast. Over 20 million viewers had watched this particular episode (Yorke, 2002). A quantifiable effect on whether soap operas raise awareness and help people to prevent cancer has been difficult to assess. However, some existing literature suggested that soap operas help people prevent cancer (Richardson, 2002). Richardson's (2002) study demonstrated a large increase in the uptake of screening after a storyline on a soap opera. However, it is difficult to control for other factors that could have influenced this increase.

Skin Cancer

Beliefs about the sun, its dangers and using sunscreen illustrate that respondents who show low intention to use sunscreen believe that they look healthier with a suntan, that you need to use sunscreen abroad but not at home, and that sunscreen is needed for children but not for adults. Low intenders also admit that they use sunscreen to please other people and feel that it is important to them to do the same as other people. They are also more likely to believe that

the incidence of skin cancer in Northern Ireland is very low, that using sunscreen is too much hassle, and admit that they could not be bothered using it.

There is also evidence from this study and previous research to show that there is a complex relationship between women and the sun, sunbathing and using sunscreen (Weinstein *et al.*, 2001; Branstrom *et al.*, 2004; Stanton *et al.*, 2004). Women are likely to have a higher level of knowledge about the dangers of the sun and the necessity to use sunscreen but are more likely to sunbathe for longer periods of time putting themselves at increased risk (Paul *et al.*, 2003; Ling *et al.*, 2003; Halpern & Kopp, 2004). Evidence points to attitude change as the target for skin cancer prevention, education and intervention (Wesson & Silverberg, 2003; Branstrom *et al.*, 2004). Further exploration and evidence is required to determine if people and women in particular, use sunscreen as a means of staying in the sun longer with the ultimate aim of getting a suntan (Autier *et al.*, 2000; McCarthy *et al.*, 2000). Furthermore, reasons why 'faking' a suntan do not compensate for lying in the sun for women needs further exploration. Findings from this study also point to social expectations and pressures playing a role in the intention to use sunscreen. Skin cancer education and information should exploit this as a method of persuading people to use sunscreen. There is limited evidence available to show that being 'burned' in the sun is becoming socially unacceptable.

Colorectal Cancer

Existing evidence shows that people in the UK do not eat the recommended five portions of fruit and vegetables a day (Billson *et al.*, 1999; Baker & Wardle, 2002). Findings from this study showed that respondents who demonstrate low intention to eat five portions of fruit and vegetables a day do not believe that this can prevent colorectal cancer. They also admit to not knowing how much fibre they should be eating daily. Low intenders are not likely to eat fruit and vegetables to please other people or feel that it is important to them what other people think about that. They do not believe that people around them would disapprove of them not eating fruit and vegetables. Low intenders also believe that fruit and vegetables take too long to prepare, they feel that they do not have enough time to eat five portions every day and that it is too expensive to buy that amount of fruit and vegetables.

Findings show that a favourable attitude to eating fruit and vegetables is a predictor of whether people will eat five portions a day. Furthermore, people who are expected by those close to them (family/friends) to eat five portions of fruit and vegetables a day are more likely to do this. This is demonstrated most strongly among men who feel that a spouse/partner expects them to eat five portions of fruit and vegetables a day. People who feel that eating five portions of fruit and vegetables a day is easy and within their control are more likely to

do so.. Cancer prevention education, information and interventions should use this insight to target populations more effectively.

Lung Cancer

In the face of rising lung cancer deaths worldwide, the effect of public health initiatives must be re-evaluated. It is clear that smoking behaviour is not clearly demonstrated across all facets of society and that low SES is one predictor of behaviour and attitude (Price & Everett, 1994; Mishra e al., 2000; Fernandez, 2003). Lower educational attainment is another predictor of smoking behaviour (Wetter *et al.*, 2005).

Findings showed that low intenders to stop smoking are more likely to disagree that if they continue to smoke they will get lung cancer. They are also more likely to feel that they do not want to stop smoking and agree that 'smoking is an addiction'. Low intenders are less likely to stop smoking even if their partner or family wanted them to. They are also less likely to believe that people close to them disapprove of them smoking. Low intenders are less likely to agree that smoking is now considered anti-social and are less likely to have tried to stop smoking in the past but more likely to believe that it is too difficult to stop smoking.

As previously discussed, an unfavourable attitude to smoking and its effects is a predictor of intention to stop smoking. People are more likely to intend to stop smoking who feel under pressure socially to do so and when those close to them (family and friends) expect them to stop. Furthermore, people who believe that they can (have control over) smoking cessation have a higher intention to try to stop smoking. Conversely, those who believe that they have no control over stopping smoking and that it is too difficult for them to stop smoking have low intention of stopping. It is clear that attitudinal and societal change is needed in relation to stopping smoking. Several high profile television campaigns on the dangers of smoking have been screened recently. The 'Artery' campaign was targeted specifically at people in low SES groups (HPANI, 2004). However, findings from this study have shown that those in lower SES groups do not advocate television advertisements as a medium for imparting cancer prevention information. Reasons why scare tactics and the rising incidence and deaths from lung cancer do not stop people smoking need to be researched further. The effects of the imminent smoking ban in the UK remain to be seen but it is clear that those people intent on smoking regardless of the consequences will continue to do so.

LIMITATIONS OF THE STUDY

The use of the Northern Ireland Edited Electoral Register was the result of a long and protracted search for an effective method of access to the home contact details of members of the public. This is a notoriously difficult task, as individuals must have given their consent for their home address to be used for research purposes. This is implied when individuals over the age of 18 in Northern Ireland allow their name and home address to be placed on the edited register. The limitation associated with the edited register is that it only holds the names and address of 60% of the Northern Ireland population. However, as there are no significant trends identified in the type of person who allows their name and address to be used therefore this was considered the most appropriate method of access available.

Other limitations arise from the methodological approach. Qualitative research in particular, in this case using focus groups, can be criticised for the analysis being subjective or researcher biased. In this study, to attempt to overcome this, the transcripts of the focus groups were blind reviewed by an independent researcher with expertise in the area. Findings between both reviewers were the same with only minor differentiation.

Additionally, the use of surveys in social science research will always incur several limitations. Self-report surveys rely on people completing the questionnaire themselves and truthfully. Furthermore, it must be acknowledged that the responses are the opinions of a sample of individuals at any one given time. However, the fact that the findings of the study concur, on the whole, with other studies conducted in the area gives credence to the method and findings of the present study.

RECOMMENDATIONS

Priority Groups

1. Priorities for the targeting of information and education on the warning signs of cancer should be:

- Single men;
- People in lower SES groups.

Provision of Information

2. A strategy should be developed to raise this population's knowledge of cancer warning signs so as to promote recognition of early signs of cancer.

3. A clear, concise message of the warning signs of cancer should be communicated to all men in this age group with the immediate priority being single men

4. The risks posed by cancer to this age group should be communicated clearly and concisely and risk factors, including age, should be widely publicised.

5. Cancer prevention information should continue emphasising the progress made in the successful treatment of cancer. Statistics about risk and survival should be communicated accurately.

6. Cancer prevention leaflets should be distributed and made available in a wider range of public places such as supermarkets, churches or community centres.

7. Sources of support to prevent cancer should be communicated to people within this age band with particular attention placed on women in the age band 35 to 44 years.

Targeting of Information

8. Attitudinal profiles of sub-groups within this population should be used to inform the targeting of cancer prevention information with the aim of changing behaviour.

9. Cancer prevention information should be tailored for sub-groups within this population. It should be communicated in a meaningful manner as suggested by each sub-group. More accurate targeting of lower SES groups needs to be developed based on the premise that media sources are not highly advocated by this group.

10. Profiles of low intenders should be used as a basis for targeting information with the aim of changing their attitudes and behaviours towards cancer.

Positive Action

11. Consideration should be given to developing strategies to help men feel more comfortable with attending health centres for appointments with the GP or nurse.

12. Consideration should be given to strategies to help people in a lower socio-economic group approach their health in a more positive manner and to empower them to take control of their own health.

13. Strategies should be introduced to empower people in mid-life to take control of their health emphasising, where feasible, what they *can do* instead of what they *shouldn't be doing*.

14. Access to gymnasiums and sports facilities should be improved and subsidised as necessary to encourage healthy lifestyles within this age group. Further research should be undertaken to assess if this is effective in levels of fitness, health and reduction of weight.

15. Positive perceptions about eating five portions of fruit and vegetables a day need to be promoted to change the attitudes of low intenders. Strategies should be put in place to dispel myths surrounding fruit and vegetable intake and make portion sizes clear and unambiguous.

Further Research

16. Further exploration should be undertaken into the effect that the cost of sunscreen has on the intention to use it to prevent skin cancer.

17. The complex relationship between women and the sun, sunbathing and using sunscreen needs to be explored. Additionally, reasons why fake tan does not compensate for lying in the sun should be included in this exploration.

18. Reasons need to be explored as to why heavy smokers in all sub-groups within this age group, especially people in lower socio-economic groups continue smoking. Research needs to be undertaken to examine what can be done to help them stop and what tactics will work to help the wider population in each of these sub-groups.

19. Further exploratory work should be undertaken with people who hold the attitude of '*not wanting to know'* to uncover the salient beliefs that need to be changed.

20. The reasons why housewives and househusbands have an elevated level of knowledge of cancer warning signs needs further exploration.

21. Further research should be undertaken to explore the need for a cancer prevention role within primary care.

CONCLUSION

This study has explored the knowledge, attitudes and behaviours of people in mid-life towards cancer prevention. It has uncovered a range of findings in relation to the provision and acquisition of cancer prevention information in this age range that will assist in the effective targeting of such information to members of the public in this age range. Furthermore, the study has provided insight into the salient attitudes and beliefs that need to be targeted within this age group to endeavour to effect behaviour change.

Priority groups have been identified as single men and those people in a low socio-economic group. Findings from this study can be used to effectively target these groups within the necessary information in a method advocated by these groups. Evaluation of these methods in effecting an increase in knowledge or behaviour change will be necessary. This targeting of sub-groups within the population should be mirrored in all other groups. This study has also pointed to further necessary research to provide specific insight into issues arising from this study as is evident in recommendations 16-21.

In conclusion, the outcomes from this study should be used to inform policy and identify strategies to enhance the cancer prevention knowledge and actions in this population. In turn, it is anticipated that this will have an impact on cancer deaths and diagnoses in the future.

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APPENDIX 1: STUDY SAMPLE DEMOGRAPHICS

Demographic groups	Number of Respondents	Percentage of Sample
Age		
35-44	600	56.2%
45-54	467	43.8%
Gender		
Male	415	38.9%
Female	652	61.1%
Level of education attained		
Primary school	70	6.6%
GCSE/O'level	476	44.6%
A-level	161	15.1%
Degree	276	25.9%
Masters/PhD	83	7.7%
Annual personal gross income		
0-£10,000	305	28.6%
£10,000-£20,000	299	28%
£20,001-£30,000	239	22.4%
£30,001-£40,000	152	14.2%
£40,001-£50,000	32	3%
£50,001 +	39	3.7%
Socio-economic status		
Professional	314	29.4%
Employers/managers	163	15.3%
Intermediate/junior non manual	217	20.3%
Skilled manual	162	15.2%
Semi-skilled	16	1.5%
Unskilled	172	16.1%
Country of birth		
Northern Ireland	951	89.1%
Outside Northern Ireland	116	10.9%
Marital status		
Single	132	12.4%
Married/living together	844	79.1%
Divorced/separated/widowed	91	8.5%
Housing tenure		
Rented/other persons home	117	11%
Owner occupied	950	89%
Residential environment		
Urban	559	52.4%
Rural	508	47.6%